

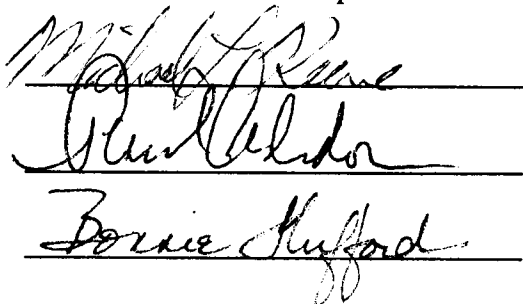
To the Graduate Council:

I am submitting herewith a thesis written by Wynne Leverett Brown entitled "Literary Journalism in Medical Nonfiction." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master, with a major in Communications.



Dr. Mark Littmann, Major Professor

We have read this thesis
and recommend its acceptance:



Accepted for the Council:



Associate Vice Chancellor
and Dean of The Graduate School

LITERARY JOURNALISM IN MEDICAL NONFICTION

A Thesis

Presented for the

Master of Science
Degree

The University of Tennessee, Knoxville

Wynne Leverett Brown

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Acknowledgments

Norman Sims has said literary journalism involves an enormous investment and gamble of a writer's time. I would add the same holds true for a writer's advisers, family, and friends.

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Abstract

This thesis is an attempt to answer the following three questions:

- (a) Is there such a genre as literary journalism in medical nonfiction?
- (b) If so, how can it be identified?
- (c) And, if this genre exists, what are some examples of it?

Most of the literature on literary journalism was searched for mention of writers or works related to science and/or medicine. Very few examples appeared, so forty-eight books of medical nonfiction were then analyzed in search of the literary techniques most prevalent in this genre: status details, saturation reporting, structure, author's voice/point of view, accuracy, personal mission, and the narrative element.

Nine works, which used most or all of these techniques, were identified, showing that, although not mentioned in the literature, literary journalists are applying their techniques to medical nonfiction.

Examining literary journalism in medical nonfiction has broader implications than just analyzing a little-known literary genre: in these days of appalling scientific ignorance on behalf of the public, any method of teaching science and medicine in an approachable and entertaining way is valuable.

Preface

This thesis has both a short and long term purpose: in the short term, it is in partial fulfillment of the requirements for a Master of Communication degree at the University of Tennessee, Knoxville.

But in the long term, it represents an initial draft of the introduction and explanatory text for an anthology of literary journalism in medical nonfiction. The books that were analyzed were selected with the collection in mind, and each analysis was written around the excerpt that would be included in the anthology.

Due to space restrictions, only two of those excerpts appear in the thesis, and they are included in Appendices I and II. Simon and Schuster graciously granted permission to reprint a portion of both Alan Doelp's 1989 book *In the Blink of An Eye: Inside a Children's Trauma Center*, and Edward Sylvester's 1993 work *The Healing Blade: A Tale of Neurosurgery* for the purpose of this thesis.

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Chapter One

Defining Literary Journalism

In his 1992 book, *A Sourcebook of American Literary Journalism: Representative Writers in an Emerging Genre*, Thomas Connery wrote, "those wishing to do research into literary journalists and literary journalism prior to the 1960s must, for the most part, cut new paths of investigation and interpretation by relying almost solely on the original works of the writers under consideration. Secondary sources are few ..." ¹ Connery might as well been referring to those wishing to research on literary journalists in medical writing.

In order to gain a thorough understanding of literary journalism in medical nonfiction, readers have to have background information on both literary journalism and medical nonfiction. Only then is it possible to set up criteria to see which books fit those criteria. Although what constitutes medical writing is fairly straightforward, what constitutes literary journalism is not. In fact, much of the literature has been devoted to what to call it.

(i) Literary journalism: the name

Thomas Connery pointed out even as recently as 1992, no one agrees on either the definition or the name of "literary journalism." He wrote that while some still refer to the genre as "new journalism," others call it literary nonfiction, artistic

¹ Connery, Thomas B. 1992. *A Sourcebook of American literary journalism: Representative writers in an emerging genre*. New York: Greenwood Press, p. 3.

nonfiction, nonfiction novel, nonfiction stories, personal journalism, or new reportage.²

He defended his use of the term “literary journalism” by citing its use by Hutchins Hapgood in the early 1900s, Edwin Ford in the 1930s, Harold Hayes in 1972, Tom Wolfe in 1973, Charles Flippen in 1974, and by Norman Sims in both 1984 and 1990. Connery preferred this term, not just because other people have used it, but because “the two words, literary journalism, simply seem to best identify the printed prose under consideration.” He preferred *journalism* because (a) the authors use reporting techniques, such as interviews, and (b) the material has a timely quality. He preferred *literary* because this genre goes beyond both those immediate timely needs of journalism, and of just providing information:

While the journalistic aspect of literary journalism solidly grounds the writing in a specific time, with actual people and places, the literary aspect makes the work less ephemeral and allows it to become writing that is more likely than conventional mainstream journalism to stand up over time.³

Norman Sims, author of *The Literary Journalists*, concluded, “Whatever we name it, the form is indeed both literary and journalistic, and it is more than the sum of its parts.”⁴

(ii) *What is literary journalism?*

Having resolved to call this genre literary journalism, we next have to define it. The simplest definition is that it is nonfiction which uses some of the techniques that are traditionally associated with fiction. In other words, it is nonfiction which reads like a story.

As early as 1905, Hutchins Hapgood described a kind of author who would be both “interviewer and literary artist,” and recommended *saturation reporting*, or becoming totally involved with the lives of the writer’s subjects.⁵

² Connery, *Sourcebook*, p. 3.

³ Connery, *Sourcebook*, p. 14-15.

⁴ Sims, Norman (ed.) 1984. *The literary journalists*. New York: Ballantine Books, p. 6.

⁵ Hapgood, 1905, cited in Connery, *Sourcebook*, p. 16.

Ronald Weber wrote literary journalism “whips together a mixture of feature story journalism, true confessions, mass magazine fiction, the middle brow novel, and narrative history.”⁶ He also called it a “factual fiction that provided all of fiction’s pleasures while paying the added dividend of being true” and said that it combines two strains of recent nonfiction—literary and journalism—and allows them to share the common ground of the personal.⁷

Many writers define literary journalism by describing what it tries to do, rather than saying what it is.

In 1950, in George Mott's *New Survey of Journalism*, Edwin H. Ford wrote:

Writing a simple record of the routine events of everyday life for the newspaper can be done by anyone with an average education and some training in journalistic technique. Interpreting the news in an editorial or signed column requires a broad background in political science, economics, and history, but writing of this sort does not necessarily imply literary insight. In order to make the reader hear, feel, and see, the newspaper writer must have an approach somewhat similar to that of the novelist, the short-story writer and the poet.⁸

In 1970, in his introduction to *Fame and Obscurity*, Gay Talese wrote that literary journalism “seeks a larger truth than is possible through the mere compilation of verifiable facts, the use of direct quotations, and adherence to the rigid organizational style of the older form.”⁹

In the same year, Seymour Krim referred to the genre as “journalit,” and said “it is the new humanizing of American writing by the boldness of direct communication, the revolutionizing of the writer’s relationship to his reader, that seems to me tremendously more needed right now than the pale echo of fiction.”¹⁰

⁶ Weber, Ronald. 1974. *The reporter as artist: A look at the New Journalism controversy*. New York: Hastings House, p. 24.

⁷ Weber, Ronald. 1980. *The literature of fact: Literary nonfiction in American writing*. Athens, Ohio: Ohio University Press, p. 25.

⁸ Ford, Edwin H. 1950. The art and craft of the literary journalist, p. 305. In Mott, George Fox, et al. 1950. *New survey of journalism*. New York: Barnes and Noble, Inc.

⁹ Talese, Gay. 1970. *Fame and obscurity*. New York: World Publishing Company, p. vii.

¹⁰ Krim, Seymour. 1970. *Shake it for the world, Smartass*. New York: Dial Press, in Murphy, James E. 1974. The new journalism: a critical perspective. *Journalism Monographs* 34, May. p. 28.

Michael Johnson, in his 1971 book *The New Journalism: The Underground Press, the Artists of Nonfiction, and Changes in the Established Media*, wrote:

All of the developments I have been discussing as part of New Journalism indicate the growth and enrichment of a new consciousness, a larger, more varied, and more complex sense of the immediate human situation. The people participating in the creation of this new consciousness are continuously searching beyond their traditions for new forms of journalistic expression and education; and yet they return to their own cultural environment and its problems and paradoxes to find the raw material of their new message.¹¹

Chris Anderson, in his 1980 book, *Literary Nonfiction: Theory, Criticism, Pedagogy*, wrote that the new journalism's "main purpose is to convey information, although it may certainly use autobiography as a perspective and device for conveying that information."¹²

In 1984, Sims said, "rather than hanging around the edges of powerful institutions, literary journalists attempt to penetrate the cultures that make the institutions work." He added that the authors "understand and convey feeling and emotion, the inner dynamics of cultures"¹³ and that their goal is cultural understanding.

Barbara Lounsberry disagreed with Sims, pointing out that the intention of literary journalists has been to write literature:

Verifiable subject matter and exhaustive research guarantee the nonfiction side of literary nonfiction; the narrative form and structure disclose the writer's artistry; and finally, its polished language reveals that the goal all along has been literature. ... Call it what you will, care for language can be used as a strainer to separate literary nonfiction from the glut of nonfiction written in pedestrian prose. If the subject of a nonfiction work is compelling, its research exhaustive

¹¹ Johnson, Michael. 1971. *The new journalism: The underground press, the artists of nonfiction, and changes in the established media*. Lawrence: University Press of Kansas, p. 152.

¹² Anderson, Chris (ed.). 1980. *Literary nonfiction: Theory, criticism, pedagogy*. Carbondale and Edwardsville: Southern Illinois University Press, p. x.

¹³ Sims, *Literary journalists*, p. 6.

and verifiably elaborated, and its form artful and narrative, it may still fail the standards of literary nonfiction if its language is dull or diffuse.¹⁴

Richard Rhodes, author of *The Making of the Atomic Bomb*, stated that literary journalism is “not facile metaphor making. It’s not drawing analogies to make a point. It’s looking through, sifting through the information in the hope of seeing what’s behind it.”¹⁵

In 1985, in his introduction to *James Agee: Selected Journalism*, Paul Ashdown agreed with the concept of searching for a larger truth; he describes literary journalism as having a quality of “extrapolating universal significance from isolated experience.”¹⁶

In 1986, Jon Franklin, a literary journalist who writes medical nonfiction, wrote, “The new literary technology allows us not only to educate the reader but also to touch him and, yes, even to *change* him. ... Only by using emotion, and literary structure, can we send our truths through the blind eye of the hurricane [of ignorance] and calm it.”¹⁷ A year later he added, “literary journalism does more than shovel data at readers. Instead, it uses carefully selected data from which it constructs patterns. Its product, in short, is not just data but also a pattern in which data can fit. Readers read such stories not because they’re more comprehensive but because they’re more comprehensible.”¹⁸

And in 1992, Connery wrote that literary journalism examines the ‘how’ and ‘why’ broadly and subjectively, rather than just the giving the informational ‘who,’ ‘what,’ or ‘where.’ He believed literary journalists “depict and convey moments in time, behavior in society and culture”¹⁹ and that “they try to make sense of the

¹⁴ Lounsberry, Barbara. 1990. *The art of fact: Contemporary artists of nonfiction*. Westport, Conn.: Greenwood Press, p. xv.

¹⁵ Sims, *Literary journalists*, p. 22.

¹⁶ Ashdown, Paul. 1985. *James Agee: Selected journalism*. Knoxville, TN: University of Tennessee Press, p. xxx.

¹⁷ Franklin, Jon. 1986. “Humanizing Science Through Literary Writing” in Friedman, Sharon M., Sharon Dunwoody, and Carol L. Rogers. 1986. *Scientists and journalists: reporting Science as News*. New York: American Association for the Advancement of Science, p. 144-145.

¹⁸ Franklin, Jon. 1987. Myths of literary journalism. (*Journalism*) *Educator*, Autumn, p. 10.

¹⁹ Connery, *Sourcebook*, p. 5.

culture by telling stories ... they deal with actuality, with observed life, but inform at a level common to fiction or poetry rather than journalism.”²⁰

(iii) Influence of Tom Wolfe: "Some sort of artistic excitement"

It is impossible to discuss literary journalism without mentioning Tom Wolfe—in fact, there are those that define literary journalism as what Wolfe writes.²¹ Most of the writers cited have used Wolfe’s definition as a basis for their own. Wolfe wrote that the difference between nonfiction and literary journalism is reporting, a “tedious, messy, physically dirty, boring, dangerous even business.”²² Furthermore, he believed the basic reporting unit is not a piece of information, but is the scene itself: “Therefore your main problem as a reporter is, simply, managing to stay with whomever you are writing about long enough for the scenes to take place before your own eyes.”²³

Several writers have claimed the alleged demise of the novel is responsible for the emergence of literary journalism. In his introduction to *The New Journalism, with an Anthology*, Wolfe described the literary class structure of his time. The novelists, he wrote, were of the upper class and the only “creative” writers; the middle class were the “men of letters,” the essayists and writers of intellect; and the lower class, which was very low indeed, consisted of the journalists. The feature writers for newspapers were in unspoken competition with one another—they were all enroute to writing *The Novel*, which was still the holy grail of any journalist with any kind of literary aspiration. Freelancers weren’t even classified and as for the Sunday supplement writers, he referred to them as “lumpenproles” who walked across all class lines.

It was perhaps then not surprising that “new journalism” began appearing in the Sunday supplements:

²⁰ Connery, *Sourcebook*, p. 6.

²¹ Weber, Ronald. 1974. *The reporter as artist: A look at the New Journalism controversy*. New York: Hastings House, p. 13.

²² Wolfe, Thomas and E. W. Johnson (eds.). 1973. *The new journalism, with an anthology*. New York: Harper and Row, p. 44.

²³ Wolfe and Johnson, *New journalism*, p. 50.

Sunday supplements had no traditions, no pretensions, no promises to live up to, not even any rules to speak of. They were brain candy, that was all. Readers felt no guilt whatsoever about laying them aside, throwing them away or not looking at them at all. I never felt the slightest hesitation about trying any device that might conceivably grab the reader a few seconds longer. I tried to yell right in his ear: *Stick around!* ... Sunday supplements were no place for diffident souls.²⁴

Wolfe pointed out that by the early Sixties, novelists had abandoned some rich terrain: “society, the social tableau, manners, morals, and the whole business of ‘the way we live now’” as a topic—leaving a gap the New Journalists were happy to fill.²⁵

Gradually,

In the early 1960s a curious new notion, just hot enough to inflame the ego, had begun to intrude into the tiny confines of the feature statusphere. It was in the nature of a discovery. This discovery, modest at first, humble, in fact, deferential, you might say, was that it just might be possible to write journalism that would ... read like a novel. Like a novel, if you get the picture. This was the sincerest form of homage to *The Novel* and to those greats, the novelists, of course. Not even the journalists who pioneered in this direction doubted for a moment that the novelist was the reigning literary artist, now and forever. All they were asking for was the privilege of dressing up like him ... until the day when they themselves would work up their nerve and go into the shack and try it for real.²⁶

Wolfe can hardly be described as a diffident soul, which was one reason he found the lack of rules and conventions in the new journalism so compelling: “It’s a low-rent form—always has been a low-rent form—and there’s always been room for a lot of brawling about and a lot of mistakes.”²⁷ His own foray into the New Journalism was unintentional, although he wrote, “I had the feeling, rightly or

²⁴ Wolfe and Johnson, *New journalism*, p. 16.

²⁵ Wolfe and Johnson, *New journalism*, p. 29.

²⁶ Wolfe and Johnson, *New Journalism*, p. 8

²⁷ Bellamy, Joe David. 1974. *The new fiction: interviews with innovative American writers*. Urbana: University of Illinois Press, p. 78.

wrongly, that I was doing things no one had ever done before in journalism. ... I had no sense of being a part of any normal journalistic or literary environment.”²⁸

At that time, literary journalism was not a part of any established environment:

There were no manifestos, clubs, salons, cliques; not even a saloon where the faithful gathered, since there was no faith and no creed. At the time, in the mid-Sixties, one was aware only that all of a sudden there was some sort of artistic excitement in journalism and that was a new thing in itself.²⁹

(iv) Other literary journalists: Changing times

Other writers have agreed with Wolfe about the demise of the novel: Weber referred to the slump of novels in the Sixties and wrote, “A ‘journalists’ bonanza’ opened up in the middle 1960s because of the mistaken ventures of novelists, and Wolfe and a fellow band of journalists were quick to take advantage. ... They made the discovery that journalism could not only be like fiction, but it could be better.”³⁰

Harold Hayes was the editor of *Esquire*, which published many of the early works of new journalism, including Wolfe’s essay “The Kandy-Kolored Tangerine-Flake Streamline Baby.” Hayes may have even contributed to the alleged decline of novels: whenever he encountered a novelist he liked, he “immediately sought to seduce him with the sweet mysteries of current events.”³¹

Jon Franklin attributed the rise of the new nonfiction to the fall of the short story rather than the novel. He believed the death of *Collier’s* and the *Saturday Evening Post* after World War II killed the market for short fiction and boosted the demand for long literary nonfiction.³²

²⁸ Wolfe and Johnson, *New journalism*, p. 20.

²⁹ Wolfe and Johnson, *New journalism*, p. 23.

³⁰ Weber, Ronald. 1980. *The literature of fact: Literary nonfiction in American writing*. Athens, Ohio: Ohio University Press., p. 18-19

³¹ Hayes, Harold, (ed.) 1970. *Smiling through the Apocalypse—Esquire’s history of the Sixties*. New York: McCall, p. xxi, cited in Murphy, *The new journalism*, p. 5.

³² Franklin, Jon. 1986. *Writing for story: Craft secrets of dramatic nonfiction by a two-time Pulitzer Prize winner*. New York: Atheneum, p. 5.

Everette Dennis, in his book *The Magic Writing Machine: Student Probes of the New Journalism*, didn't see the novel as a reason for the emergence of literary journalist either but instead pointed to the political climate of the times. He wrote that journalism had lost its glamour and was regarded as too stodgy and restrictive. He also listed other factors:

- (1) the vitality of the early Kennedy days,
- (2) the increasing momentum of the civil rights movement,
- (3) the evolving drug scene with its attendant counterculture,
- (4) the Vietnam war,
- (5) increasing student unrest and urban disorder, and
- (6) decreasing reporter objectivity.³³

Michael Johnson agreed that the New Journalism was a reaction to the changing times: "In general, the style of New Journalism is a response to the radically new kinds of events and personalities that are shaping American and world culture; it is an attempt to record and evaluate history by keeping language and attitude closely attuned and responsive to the style of events."³⁴ He also believed literary journalists (whom he calls hystorians) evolved because newspapers printed only what fit into their formulas:

The hystorian operates differently from the orthodox journalist. Perhaps the credulous believe that a reporter reports facts and that newspapers print all of them that are fit to print. But actually newspapers print all the "facts" that fit, period—that fit the journalistic conventions of what a "story" is (those tired formulas) and that fit the editorial policy of the paper. The hystorian fights this tendency toward formula with his own personality. He asserts the importance of his impression and his vision of the world. He embraces the fictional element inevitable in any reporting and tries to imagine his way toward the truth, instead of allowing the clichés of journalism to shape assembled facts into "news."³⁵

³³ Dennis, Everette (ed.). 1971. *The magic writing machine: Student probes of the new journalism*. Eugene: University of Oregon School of Journalism, p. 9.

³⁴ Johnson, Michael. 1971. *The new journalism: The underground press, the artists of nonfiction, and changes in the established media*. Lawrence: University Press of Kansas, p. 46.

³⁵ Johnson, Michael. *The new journalism*, p. 63.

(v) Techniques of literary journalism

In addition to defining literary journalism by what it attempts to do, many writers have defined it by describing the techniques it uses.

Wolfe defined literary journalism by listing the use of four literary devices: (a) scene by scene construction, (b) full dialogue, (c) presenting the scenes through the eyes of third person, and (d) status life details. Wolfe wrote the reason these techniques are effective is that they jog the reader's memory to "create within the mind of the reader an entire world that resonates with the reader's own emotions."³⁶

Other writers have defined literary journalism according to its characteristics as well. James Murphy in his 1974 article "The New Journalism: A Critical Perspective" wrote that fictional technique is at the heart of literary journalism, and he described it as "an artistic, creative, literary reporting form with three basic traits: dramatic literary techniques; intensive reporting; and reporting of generally acknowledged subjectivity."³⁷

In his exploration of literary news writing, Thomas Berner looked for techniques such as "narration and scene, summary and process, point of view, drama, chronological organization, rhythm, imagery, foreshadowing, metaphor, irony, dialogue, overall organization (beginning, middle and end) plus verification and documentation, the elements of good reporting."³⁸

Sims wrote that the writers in literary journalism themselves have "recognized that their craft requires immersion, structure, voice, and accuracy. Along with these terms, a sense of responsibility to their subjects and a search for the underlying meaning in the act of writing characterize contemporary literary journalism."³⁹

The literary techniques that appear the most often in discussions of literary journalism include status details, immersion, structure, voice, accuracy, and point of view. Examining each in detail helps the reader identify works on literary journalism.

³⁶ Wolfe and Johnson, *New journalism*, p. 48.

³⁷ Murphy, *The new journalism*, p. 16.

³⁸ Berner, R. Thomas. 1986. Literary newswriting: the death of an oxymoron. *Journalism Monographs* 99, October, p. 3.

³⁹ Sims, *Literary journalists*, p. 8.

Status details: Wolfe wrote this device has always been the least understood: *

This is the recording of everyday gestures, habits, manners, customs, styles of furniture, clothing, decoration, styles of traveling, eating, keeping house, modes of behaving toward children, servants, superiors, inferiors, peers, plus the various looks, glances, poses, styles of walking and other symbolic details that might exist within a scene. Symbolic of what? Symbolic, generally, of people's status life, using that term in the broad sense of the entire pattern of behavior and possessions through which people express their position in the world or what they think it is or what they hope it to be. The recording of such details is not mere embroidery in prose. It lies as close to the center of the power of realism as any other device in literature.⁴⁰

How does a writer get all these details?—by using saturation reporting, also known as immersion.

Immersion, saturation reporting: New journalists found they had to do a new kind of reporting in order to give the kind of background they wanted. According to Wolfe in 1973,

It was more intense, more detailed, and certainly more time-consuming than anything that newspaper or magazine reporters, including investigative reporters, were accustomed to. They developed the habit of staying with the people they were writing about for days at a time, weeks in some cases. They had to gather all the material the conventional journalist was after—and then keep going. It seemed all important to be there when dramatic scenes took place, to get the dialogue, the gestures, the facial expressions, the details of the environment. The idea was to give the full objective description, plus something that readers had always had to go to novels and short stories for: namely, the subjective or emotional life of the characters.⁴¹

⁴⁰ Wolfe and Johnson, *New journalism*, p. 31-32.

⁴¹ Wolfe and Johnson, *New journalism*, p. 21.

Weber agreed in 1980, writing, "Saturation reporting was much more than a one-shot business. It meant seeing things for oneself, which in turn meant involvement with subjects for long periods."⁴²

Talese wrote that "one of my ambitions is to remain with my subjects long enough to see their lives change in some way."⁴³

Richard West wrote "The Power of '21'" for the *New York* magazine and told Norman Sims that literary journalists have to "become part of the woodwork until they [the subjects] open up and do things in front of you. You may get the surface details right, but you won't get the kind of emotions you're after—how people operate—until you disappear."⁴⁴

Mark Kramer, author of *Invasive Procedures: A Year in the World of Two Surgeons*, agreed saying, "You have to stay around a long time before people will let you get to know them. They're guarded the first time and second time and the first ten times. Then you get boring. They forget you're there. Or else they've had a chance to make you into something in their world. They make you into a surgical resident or they make you into a farmhand or a member of the family. And you let it happen."⁴⁵

Tracy Kidder, author of *The Soul of a New Machine*, *House*, and *Among Schoolchildren*, is an acknowledged master of literary journalism. He too agreed with the value of saturation reporting: "One of the ways you do good research is you really go and live with people. Once I feel I have the freedom to ask the unpleasant questions, I'll do it. But I'm not very good at badgering people. I figure if they won't tell me now, they'll tell me later. I'll just keep coming back."⁴⁶

Structure: Another aspect that separates literary journalism from traditional news writing is a flexibility of form, a new kind of structure. Most early writers used whatever technique works best, as do contemporary literary journalists. The inverted pyramid is gone for the most part, and even chronology is not always the most effective tool for the literary journalist. Sims related the structure of literary

⁴² Weber, *Literature of fact*, p. 30.

⁴³ Talese, *Fame and obscurity*, p. viii.

⁴⁴ Sims, *Literary journalists*, p. 11.

⁴⁵ Sims, *Literary journalists*, p. 10.

⁴⁶ Sims, *Literary journalists*, p. 10

journalism to the field of music and called it *architectonics*: “The term refers to structural design that gives order, balance, and unity to a work, the element of form that relates the parts to each other and to the whole.”⁴⁷

Voice: Wolfe believed that one of the biggest problems with nonfiction was the voice of the narrator. He compared it to “off-white or putty-colored walls” and wrote,

Readers were bored to tears without understanding why. When they came upon that pale beige tone, it began to signal to them, unconsciously, that a well-known bore was here again, ‘the journalist,’ a pedestrian mind, a phlegmatic spirit, a faded personality, and there was no way to get rid of the pallid little troll, short of ceasing to read.⁴⁸

Many literary journalists dumped the “institutional voice” (as Kramer referred to it)—the objective third person. They began injecting their own voices, which added humanity to their writing. Kramer pointed out this technique allows the writer to “play one world off against another, to toy with irony. ... Voice that admits ‘self’ can be a great gift to readers. It allows warmth, concern, compassion, flattery, shared imperfection—all the real stuff, that, when it’s missing, makes writing brittle and larger than life.”⁴⁹

The amount of personal voice varies with each writer: Norman Mailer and Hunter Thompson allow their voices to dominate, while other writers like Talese and Capote remove themselves. Others still, such as Eric Lax, author of *Life and Death on 10 West*, remove themselves for part of the story and later become immersed in it.

Point of view: With a new voice came the freedom to change point of view. The writer could write from inside the character’s head, and many did just that. Talese wrote that now he asks the subject “what he thought in every situation where I might have asked him in the past what he said. I’m not so interested in what he did and said ... as what he thought.”⁵⁰

⁴⁷ Sims, *Literary journalists*, p. 14.

⁴⁸ Wolfe and Johnson, *New journalists*, p. 17.

⁴⁹ Sims, *Literary journalists*, p. 18.

⁵⁰ Talese in Rivers, William L. and Shelley Smolkin. 1981. “The New Journalism.” In *Freelancer and staff writer: Newspaper features and magazine articles*. Belmont, Ca.: Wadsworth Publishing Co., p. 23.

I attempt to absorb the whole scene, the dialogue and the mood, the tension, drama, conflict, and then I try to write it all from the point of view of the persons I am writing about, even revealing whenever possible what these individuals are thinking during those moments that I am describing.⁵¹

* **Accuracy:** All this freedom and lack of constraints might lead the reader into wondering just how accurate these literary journalists are in their reporting of facts. Talese in his 1970 author's note to *Fame and Obscurity*, stated, "The new journalism, though often reading like fiction, is not fiction. It is, or should be, as reliable as the most reliable reportage, although it seeks a larger truth than is possible through the mere compilation of verifiable facts, the use of direct quotations, and adherence to the rigid organizational style of the older form."⁵²

Four years earlier, Dan Wakefield, in an article in the *Atlantic* in 1966, wrote that *Esquire's* research department checked every fact in every piece they published: "The license they offer writers is not for distortion of facts but for experimentation in style."⁵³

Sims stated that literary journalists have a mandate for accuracy and quoted Kramer as "I don't want to get a single detail wrong." Sims believed accuracy insures the authority of the writer's voice, and Kramer obviously agreed: "You can also blow your authority very quickly. One of the big motivations for getting all the details right—why I had farmers read my farm book in manuscript, and surgeons read the surgeons manuscript—is I don't want to lose authority."⁵⁴

And Weber pointed out that "The first task of the writer of literary nonfiction, whether he works within the forms of fiction or the journalistic report or some combination of the two, is always to convince the reader that his work is adequate as history. He does this by his reporting and research, by asking all the questions that

⁵¹ Talese, *Fame and obscurity*, p.vii.

⁵² Talese, *Fame and obscurity*, p. vii.

⁵³ Wakefield, Dan. 1974. "The Personal Voice and the Impersonal Eye." in Weber, Ronald, 1974. *The reporter as artist: A look at the New Journalism controversy*. New York: Hastings House, Publishers, p. 41.

⁵⁴ Sims, *Literary journalists*, p.16.

can be asked and reading all the documents and evaluating all his material with the usual means of verification.”⁵⁵

(vi) *Personal mission*

One aspect of literary journalism which isn't usually addressed in the literature is why these writers pick the topics they do. Sims, one of the few writers who discussed this issue, wrote that “understanding begins with emotional connection.”⁵⁶ Richard Rhodes is probably the most dramatic example of one whose writing represents emotional connection. As a child, he lived partly with his abusive stepmother or in a boys' home. He wrote, “I keep repeating the same theme in everything I write—not consciously but apparently inevitably.”⁵⁷

John McPhee believed ninety percent of his writing relates to activities and interests he had before he was twenty. He also pointed out that an important theme in anyone's writing is some personal interest that relates to their life.⁵⁸

Perhaps literary journalism in medical writing is more intense because of some element of personal history the writer brings to the project. For Mark Kramer, author of *Invasive Procedures: A Year in the World of Two Surgeons*, the removal of a benign lump 15 years earlier was the motivating factor in writing this book: “The conversation at the loud party reopened a closed topic and a few weeks later I was making plans to visit—to return in a sense—to see, to touch and try to understand whatever had cut me open and moved me out of town.”⁵⁹

(vii) *Why literary journalism works*

The supporters of literary journalism have listed several reasons why they believe this genre is more effective than traditional journalism. Among these are its broad appeal and its informal writing.⁶⁰ Since literary journalism is written like fiction, many people find it easier and more fun to read—hence its broader appeal.

⁵⁵ Weber, *Literature of fact*, p. 163.

⁵⁶ Sims, *Literary journalists*, p.10.

⁵⁷ Sims, *Literary journalists*, p.23.

⁵⁸ Sims, *Literary journalists*, p.24.

⁵⁹ Kramer, Mark. 1976. *Invasive procedures: A year in the world of two surgeons*. New York: Harper and Row, p 7.

⁶⁰ Wolfe and Johnson, *New journalists*, p. 26.

Several writers have also pointed out that literary journalism was more appropriate for the cultural climate of the Sixties than its predecessor:

Through its new consciousness and its new language, it has communicated fresher and more helpful information about the changes occurring in our world, and in one way or another it has proven more thorough, more honest, more intelligently critical than traditional journalism.⁶¹

Weber concurred, saying “new journalism is ‘I’ writing for an ‘I’ time, personal writing for an age of personalism. All about us ego seems loosed into the cultural air as never before. Notions of detachment, objectivity, and neutrality conflict in every sphere with a passion for uninhibited individual expression. Both one's first and last duty now belong to oneself.”⁶²

But the most often cited reason for the impact of literary journalism is that it is true. Although the works may read like fiction, they are, in fact, a report of real life, as interpreted by the journalist. Wolfe pointed out:

The result is a form that is not merely like a novel. It consumes devices that happen to have originated with the novel and mixes them with every other device known to prose. And all the while, quite beyond matters of technique, it enjoys an advantage so obvious, so built-in, one almost forgets what a power it has: the simple fact that the reader knows all this actually happened. The disclaimers have been erased. The screen is gone. The writer is one step closer to the absolute involvement of the reader that Henry James and James Joyce dreamed of and never achieved.⁶³

A year later he told Bellamy in an interview, “part of the impact is the fact you're telling the reader *this happened*. This is not a short story, This is not a novel. This is not fiction.”⁶⁴

Sims wrote “Characteristics in literary journalism need to be brought to life on paper, just as in fiction, but their feelings and dramatic moments contain a special

⁶¹ Johnson. *The new journalists*, p. xiii.

⁶² Rivers and Smolkin, *Freelancer*, p. 27.

⁶³ Wolfe and Johnson, *New journalists*, p. 34.

⁶⁴ Bellamy, *The new fiction*, p. 96.

power because we know the stories are true. ... Knowing *this really happened* changes my attitude while reading.”⁶⁵

Theodore Peterson wrote, “an editor at *Time* remarked that the ‘fact is that men don’t read magazine fiction anymore. They still want good reading, good stories, but they like them better when they know they’re true.’”⁶⁶

Jon Franklin contended, “The popularity of the new technique lies in the fact that it combines the appeal, excitement, and reading ease of fiction with the specific information content of nonfiction.”⁶⁷

John McPhee, certainly one of the finest literary journalists, wrote, “Things that are cheap and tawdry in fiction work beautifully in non-fiction because they are *true*. That’s why you should be careful not to abridge it because it’s the fundamental power you’re dealing with. You arrange it and present it. There’s lots of artistry. But you don’t make it up.”⁶⁸

After her book *Loose Change* was published, Sara Davidson discovered a disagreeable side effect of the power of truth. She had written about growing up with two friends—who no longer remained her friends after publication. “People say knowing it was about real people heightened their appreciation and relationship to it,” she said.⁶⁹

It is also obvious from a sample of book cover blurbs that publishers regard the truth as a literary draw card:

- “Gripping true stories from the controversial Maryland Institute for Emergency Medical Services” (*Shocktrauma*).
- “The dramatic true story of one woman’s triumphant fight against illness” (*Rusty’s Story*).
- “The true story of a town, a hotel, a silent killer, and a medical detection team” (*Anatomy of an Epidemic*).

⁶⁵ Sims, *Literary journalists*, p.4-5.

⁶⁶ Peterson, Theodore. 1964. *Magazines in the twentieth century*. Urbana: University of Illinois Press, p. 314, in Weber, *Literature of fact*.

⁶⁷ Franklin, *Writing for story*, p. 8.

⁶⁸ Sims, *Literary journalists*, p.3.

⁶⁹ Sims, *Literary journalists*, p.20.

- “The dramatic true bestseller from the publishers of *Nurse*” (*The Making of a Woman Surgeon*).
- “The dramatic true story of two world-famous heart surgeons obsessed with winning the race against death—and each other” (*Hearts*).
- “An inspiring true story of courage and love” (*Children's Hospital*).
- “The true story that became a national bestseller” (*Nurse*).

(viii) *Critics of literary journalism*

Not everyone is a fan of literary journalism. Jacques Barzun, Dwight MacDonald, Herbert Gold, and John Tebbel have all spoken out against the genre and some of its practitioners. Generally the objections have been to the addition of the writer's personal voice. Gold called the personal journalism of Norman Mailer “epidemic first personism”⁷⁰ and said “the first person arias of the Wolfettes and Mailerlings center the whole world in the self of the writer. They don't do their job of telling and sharing experience. Instead they sacrifice knowledge for a parading of personality.”⁷¹ Tebbel, a media historian, agreed, saying personal journalism is a “kind of perpetual ego trip or literary paranoia.” He also worried that the genre might obscure the accomplishments of the old journalism and could damage the credibility of the press at a time (the Seventies), when the press was already vulnerable.⁷²

MacDonald in an infamous 1965 controversy in the field known as the “*New Yorker* affair” blasted the new journalism, calling it a “bastard form, having it both ways, exploiting the factual authority of journalism and the atmospheric license of fiction. Entertainment rather than information is the aim of its producers, and the hope of its consumers.”⁷³ His objections were primarily to Wolfe's scene-building and use of dialogue.

⁷⁰ Sims, *Literary journalists*, p.80.

⁷¹ Rivers and Smolkin, *Freelancer*, p. 24.

⁷² Tebbel, John. 1971. The old new journalism. *Saturday Review*, March 13, p. 96.

⁷³ MacDonald, Dwight. 1974 Parajournalism, or Tom Wolfe and his magic writing machine. In Weber, *The reporter as artist*, p. 223.

Rivers and Smolkin admitted that some of the criticism has been due to the strong personalities of some of the new journalists, saying the field has “more than its share of practitioners who range from the irritating to the insufferable.”⁷⁴

Since then, Wolfe, Mailer, Thompson, and the genre have been accepted by most. But as recently as 1992, Jacques Barzun objected to a literary journalism technique in news writing: the use of starting a news story with either description or “fake Fiction.” He wondered if the adoption of the writers’ bylines encouraged too much creativity and believed “the demise of the lead often goes with the postponement—and sometimes the omission—of important details.”⁷⁵

Although some of these criticisms may be justified, one can't help wondering if there's an element of intellectual snobbery: in other words, if literary journalism is so much fun to read, can it be good for you as well?

(ix) The key element: narrative

To summarize, literary journalism has been defined as nonfiction which is written like fiction. Some of the characteristics that help separate traditional journalism from literary journalism include: (a) scene-by-scene construction, (b) status details, and (c) dialogue.

But the key element that makes literary journalism stand alone in the world of medical nonfiction is narrative, or *storytelling*, that quality that drags the reader from his world to the writer's. Sara Davidson described it as “where from the first paragraph the reader buys the ticket and has to take the trip.”⁷⁶

Franklin also wrote about the power of narrative:

If you tell your story correctly the reader's identity will for a short time actually fuse with that of the character and he will live for while through that character. He will see with his eyes, hear with his ears, and think with his brain. The ability to cajole the reader into doing that is the hallmark of good narrative.⁷⁷

⁷⁴ Rivers and Smolkin, *Freelancer*, p. 27.

⁷⁵ Barzun, Jacques. 1992. The press and the prose. (Occasional paper 10, March) The Freedom Forum Media Studies Center, New York, p. 6.

⁷⁶ Sims, *The literary journalists*, p. 24-25.

⁷⁷ Franklin, *Writing for story*, p. 106-107.

A second characteristic that turns conventional nonfiction to literary journalism is writing from the point of view of one or more of the characters, getting "inside the head" of the characters. And a third criterion is the author's incorporation of his or her own voice and experience in the piece.

Chapter Two will examine how—and if—literary journalists have ventured into science and medicine.

Chapter Two

Literary Journalism in Science and Medicine

(i) A taxonomy of literary journalism

In biology, scientists sort different species of plants and animals into a taxonomy. They classify similar subspecies as part of the same species, similar species as a *genus*, similar genera into families, which then can be lumped into phyla, which are grouped into either the plant or animal kingdoms.

In literature, a *genre* (not to be confused with genera) is a type of writing and is derived from the Latin word *genus*.¹

A naturalist with literary leanings could have a lot of fun going through her favorite nonfiction books and compiling *A Taxonomy of Literary Journalists*. A cursory survey of books previously identified as literary journalism in different topics, or genera of genres, could include:

- Farming

Mark Kramer's *Three Farms: Making Milk, Meat and Money from the American Soil*

Richard Rhodes' *Farm: A Year in the Life of an American Farmer*

- Education

James Herndon's *The Way It's Spoized to Be*

Jonathan Kozol's *Savage Inequalities*

Tracy Kidder's *Among Schoolchildren*

¹ Webster's *new world dictionary*, 3rd. College ed., s.v. "genre."

- The environment

John McPhee's *Coming into the Country*

Peter Matthiessen's *The Snow Leopard*

Annie Dillard's *Pilgrim at Tinker Creek*

- War

George Orwell's *Homage to Catalonia*

John Hersey's *Hiroshima*

- The American scene

Joan Didion's *Slouching Toward Bethlehem*

Tom Wolfe's *The Kandy-Kolored Tangerine-Flake Streamline Baby*

Hunter Thompson's *Fear and Loathing in Las Vegas*

- Crime

Truman Capote's *In Cold Blood*

Joseph Wambaugh's *The Onion Field*

- Poverty

James Agee's *Let Us Now Praise Famous Men*

George Orwell's *Down and Out in Paris and London*

- Sports

H. G. Bissinger's *Friday Night Lights*

George Plimpton's *The Paper Lion*

All of these books, among quite a few others, have been labeled as literary journalism by various authors. But the hypothetical taxonomist who wants to include some science and technology books previously identified as literary journalism will have only a short list :

- Tracy Kidder's *Soul of a New Machine*: Samuel Florman reviewed this book for *The New York Times Book Review* and said, "Mr. Kidder, freelance journalist and the author of *The Road to Yuba City*, has endowed the tale with such pace, texture and poetic implication that he has elevated it to a high level of narrative art.

... *The Soul of a New Machine* is first of all a good story." Florman also called the book "a journalistic report that is also a work of imagination."²

- Richard Rhodes' *The Making of the Atomic Bomb*: This book is described on the jacket cover as "a narrative *tour de force*."
- John McPhee's *Travels in Georgia*: McPhee describes the ecology of Georgia wetlands by examining DORs (Dead On the Road, or road kills) and was included in Norman Sims' *The Literary Journalists*.

In 1963, Aldous Huxley pointed out in his book *Literature and Science* that contemporary writers had shown little enthusiasm for science or engineering—only the social and psychological consequences of both. He regarded the blending of science and literature as an intellectual challenge and warned that "The conceptual and linguistic weapons with which this particular combat must be waged have not yet been invented," but believed "sooner or later, the necessary means will be discovered."³

Twelve years ago, Florman asserted that at least until the arrival of Kidder's book (which uses fictional techniques as its weapons), Huxley was too optimistic. "Science, perhaps, has inspired a few works on poetic insight, but technology, increasingly complex and impersonal, appears to be drifting ever farther away from the domain of serious literature."⁴

(ii) *Literary journalism in medicine*

But what about medicine in literary journalism? Few anthologies of literary journalism exist—and even fewer include medical pieces. Wolfe and Johnson included Robert Christgau's article "Beth Ann and Macrobioticism" in *The New Journalism, with an Anthology*, and Norman Sims included a selection from Mark Kramer's book *Invasive Procedures: A Year in the World of Two Surgeons* in his anthology *The Literary Journalists*.

Part of the problem in classifying medical journalism may be that so little attention has been paid to it as a genre. Heinz-Dietrich Fischer wrote in the preface of *Medicine, Media and Morality: Pulitzer Prize-Winning Writings on Health-Related*

² Florman, Samuel. 1981. The Hardy Boys and the Microkids make a computer. *The New York Times Book Review*, Aug. 23, pp. 1,18-19.

³ Huxley, Aldous. 1963. *Literature and science*. New York: Harper and Row, p. 107.

⁴ Florman, The Hardy Boys. p. 19.

Topics that “it may be astonishing that the most traditional and prestigious of all journalism awards in the world, the Pulitzer Prize system, never has established a special medical writing award category, although there exist fourteen annual Pulitzer Prizes for different fields of journalism.” (To compile this collection, Fischer searched through 1,000 exhibits, each of which contained several articles from award winners.)⁵

A computer search of the MLA, ERIC, Dissertation Abstracts International, Social Science, and Dialog databases, using various combinations of the key words ‘new journalism,’ ‘medicine,’ ‘medical writing,’ ‘parajournalism,’ ‘personal journalism,’ ‘medical nonfiction,’ ‘literary journalism,’ or ‘health,’ turned up very few useful references. Many were about ‘medical writing,’ meaning the kind of writing doctors do in medical journals.

Although Wolfe himself never specifically mentioned medical topics, he did remark on the lack of examples of scientific literary journalism when he wrote in 1963, “... in fact, I can’t think of a ‘consequential’ subject or issue (except possibly in the sciences) that has not been dealt with in the new genre.”⁶ Thirty years later, his statement continues to hold true in terms of pieces identified as literary journalism.

One reason might be the complicated legal traps that pervade the world of medicine. Wolfe described one of these traps: “There are certain areas of life that journalism still cannot move into easily, particularly for reasons of invasion of privacy.”⁷ Many of the writers included here had to change some names or other details in order to protect the patients involved. In their introduction, Gordon Thomas and Max Morgan-Witts wrote:

A few of those who were afflicted or who lost loved ones asked for—and were given—guarantees that their identities would be suitably protected for professional or personal reasons: because their jobs or marriages could be put at risk, because

⁵ Fischer, Heinz-Dietrich. 1992. *Medicine, media and morality: Pulitzer Prize-winning writings on health-related topics*. Malabar, Fla.: Krieger Publishing Co., p. 5.

⁶ Johnson and Wolfe, *The new journalism*, p. 39.

⁷ Johnson and Wolfe, *The new journalism*, p. 35.

they might be shunned by their friends, or because the reminder of the experience still traumatizes them.⁸

Dennis O'Leary wrote, "Medicine, tradition-bound, zealously protects the privacy of the doctor-patient relationship and extends that privacy to its whole domain."⁹

The issue of privacy doesn't just mean patients or the patient-doctor relationship. In *Not Quite a Miracle: Brain Surgeons and Their Patients on the Frontier of Medicine*, Jon Franklin and Alan Doelp thanked the four surgeons they followed for allowing the authors "to enter what traditionally has been a very private world."¹⁰

O'Leary mentioned another trap: "Medicine is also hard-nosed about its science—perhaps because so much of medicine is an inexact science—and has traditionally accepted as valid observations only those published in refereed journals." But he added the world of medicine is changing. With the intrusion of insurers, legislators, lawyers and others, "privacy for medicine, if not gone, is at least severely eroded."¹¹ Part of that erosion has come from within the field itself with doctor/writers like Richard Selzer, Oliver Sacks, Perri Klass, and John Stone.

In 1980, Weber, while describing the untidy world the literary journalist has to deal with, listed such inconveniences as limited time, large expenses (which often have to be paid long before the appearance of the paycheck), and potential lawsuits.¹² More than a decade later, the situation for writers who wish to saturate themselves in their topic is certainly no better.

Another barrier between journalism and medicine is the dichotomy between science and literature, a barrier described by Aldous Huxley as a "spiritual Iron

⁸ Thomas, Gordon and Max Morgan-Witts, 1982. *Anatomy of an epidemic*. New York: Doubleday, p. xiv.

⁹ O'Leary, Dennis S. 1989. Physicians and reporters: Conflicts, commonalities, and collaboration, p. 97. In Friedman, Sharon M., Sharon Dunwoody, and Carol L. Rogers, (eds.) 1986. *Scientists and journalists: Reporting science as news*. New York: American Association for the Advancement of Science.

¹⁰ Franklin, Jon and Alan Doelp. 1982. *Not quite a miracle: Brain surgeons and their patients on the frontier of medicine*. New York: Doubleday, p. x.

¹¹ O'Leary, Physicians and reporters, p. 97.

¹² Weber, *Literature of fact*, p. 51.

Curtain.” Part of what holds that curtain up, he says, is the fact that scientists and writers use language differently to go in different directions: Writers want to deepen and extend experience, while scientists try to simplify by paring away all extraneous details.¹³

Yet another possible reason for the lack of writers covering medical topics is a holdover of the journalist’s traditional fear of involvement. Sick and dying people make it hard to be objective, and many journalists still believe that objectivity is the key to good journalism.

(iii) The need for comprehensible writing in health communication

Does the lack of mention of medical journalism mean there isn’t any? Or perhaps readers don’t need the dramatic treatment that literary journalism offers? Berton Roueché, whose medical articles appeared regularly in *The New Yorker* in the Fifties and Sixties wrote,

Conventional epidemiological literature tends to be uncomfortable in the presence of drama, and it is inclined to dismiss it as irrelevant. Most epidemiological reports to public health or clinical journals will typically begin: “This paper reports an outbreak of x cases of x centered at x in x. Epidemiologic evidence implicates x as a source of infection, and x was isolated from samples of x handled by all patients.” The body of the paper then amplifies and documents the facts in the summary statement.¹⁴

Or perhaps medicine doesn’t need to be portrayed in a more approachable way, using fictional techniques?

Surely not—medicine affects us all as both consumers and financial supporters and investors and needs as much exposure as possible. And that exposure should use whatever approach is successful in allowing readers to understand the issues.

In 1921, Edwin E. Slosson, the editor of the Science Service, the first syndicate for science news distribution, believed human interest, drama, and even romance had to be the draw cards to attract the public to science writing. Dorothy Nelkin wrote that the science writers from the thirties perpetuated those ideas and

¹³ Huxley, *Literature and science*, p. 13.

¹⁴ Roueché, Berton. 1967. *Annals of epidemiology*. Boston: Little, Brown and Co., p. x.

“developed a style that is reflected in the heroic images of science that mark science writing today.”¹⁵

Franklin, in his article “Humanizing Science Through Literary Writing,” wrote that normally intelligent people develop a blind spot in the area of medicine (especially during a medical crisis), and he points in dismay to the “hurricane of ignorance” surrounding science and medicine. His solution: “We have to take readers into science the way John Steinbeck took them into Oklahoma. Only by using emotion, and literary structure, can we send our truths in through the blind eye of the hurricane and calm it.”¹⁶

Drama and emotion can, of course, be overdone. Isabel Abrams, who described a science writer’s primary task as demystifying science, advised, in addition, that science writers must “tread the thin line between over-dramatizing events and putting your reader to sleep.”¹⁷

More than that, contemporary science and medical writers in the Nineties have an even greater responsibility. Jack Nelson contended “today’s readers demand coherence in an ever-more-complex world. Changes in our society and in technology have brought a need for more comprehensive, interpretive, and engrossing reporting. This is especially true in stories about science, medicine, politics and the social scene around us.”¹⁸

Robert Gannon, in his introduction to *Best Science Writing: Readings and Insights*, discussed the difference between science writing and scientific and technical writing. While scientific and technical writers write for an audience which needs and wants to read the material, the science writer:

... addresses the lay public. This job is much more complicated. The science writer must make complex theories and systems clear to a large, diverse readership, and must do so with the utmost clarity, accuracy, and excitement. He or she must win and hold the attention of readers who don’t need the information,

¹⁵ Nelkin, Dorothy. 1987. *Selling science: How the press covers science and technology*. New York: W. H. Freeman, p. 90-91.

¹⁶ Franklin, “Humanizing Science,” p. 145.

¹⁷ Abrams, Isabel. 1988. The challenges of science writing. *The Writer*, v. 101, p. 16.

¹⁸ Nelson, Jack A. 1990. Are we failing to educate reporters who can write? (*Journalism*) *Educator*, Winter, p. 20-25.

are easily bored, and demand to be convinced that what the writer has to say is worthy of their continuing attention. Bored readers quickly flip to other articles.

So the science writer's most difficult task is to make the story interesting. This is done with pleasing styles, colorful anecdotes, sparkling quotes, clever descriptions, and other devices that dramatize the information. ... A good science article is an easy read; it carries the readers along effortlessly, with fascination. And when readers are finished, they are often surprised (if they think about it) at just how much highly technical material they have picked up along the way.¹⁹

Carl Djerassi wrote "the need for the popularization of science is almost as old as science itself." His solution to the problem of making science approachable was to write what he called "science-in-fiction, in which the plot is populated by real scientists doing plausible science and the events occur in realistic settings."²⁰ (*Cantor's Dilemma* is an example of one of his science-in-fiction novels.)

Readers could well become confused at this point as the line between science-in-fiction and literary journalism in science or medicine is becoming rather thin. There are even those such as Steve Weininger who argued that science and literature are so closely intertwined that scientific "journal articles are fictional reconstructions of what actually goes on the laboratory" including story lines and narratives.²¹

Another reason for the need for more popularization of science is although some daily newspapers, such as *The New York Times*, have an excellent weekly science section, many other daily newspapers are going to shorter articles and more infographics. Consumers need an outlet for more in-depth science writing in this era of "McNews" and *USA Today*.

(iv) Medical nonfiction in books

To look for literary journalism in medicine, it is first necessary to examine medical nonfiction in general—a daunting task given the huge number of articles, essays, and books in America alone.

¹⁹ Gannon, Robert (ed.) 1991. *Best science writing: Readings and insights*. Phoenix, Az.: Oryx Press, p. iv.

²⁰ Djerassi, Carl. 1990. Illuminating scientific facts through fiction. *The Scientist*, July 23, p. 16.

²¹ Weininger, Stephen. 1990. Science and 'the Humanities' are wedded, not divorced. *The Scientist*, Jan. 8, p. 15-16.

Eventually articles were eliminated because although a book may be read by fewer people than an article in a major newspaper or magazine, it may have a greater impact. Robert Cahn wrote, "Of all the media—radio, television, and the variety of print journalism encompassed by magazines, newspapers, newsletters and books—the case can be made that the book has had the most lasting and significant influence on environmental awareness. ... in the communication of ideas the book remains supreme, particularly in the environmental field." He listed his reasons for citing books as most influential because:

- Books allow the space needed to dig deeply into a subject.
- Book authors are less limited by short deadlines.
- Books last longer physically and are more convenient.²²

Cahn's arguments about books on the environment apply equally well to the medical field.

A list of books was gradually assembled by perusing the "nonfiction novels" shelves at local bookstores (both used and new). The *World Almanac* compiles a list of the best-selling books each year from *Publishers' Weekly*; since 1985, it also lists the "Notable Books" of each year. Those lists were examined from 1977 to 1991 in search of additional books that could be literary journalism. Table 2.1 lists all forty-eight books examined.

Generally, books of medical nonfiction at first seem to fall into three obvious categories:

(1) Advice/how-to: Books on improving one's health, etc. A recent example from *The New Times Book Review* bestseller list is *The T-Factor Fat Gram Counter* by Jamie Pope-Cordle and Martin Katahn. Although these books technically count as medical nonfiction, they are unlikely to include any of the criteria for literary journalism (narrative, point of view, dialogue, scene-by-scene construction, etc.) and were eliminated from the study.

(2) Essays: Opinion pieces, often written by doctors and often about what it is like to work in the medical field. Examples of physician/essayists include Richard Selzer,

²² Cahn, Robert. 1990. Books (not Thneeds) are what everyone needs. *Gannett Center Journal*, Summer, p. 161.

Table 2.1 Works of medical nonfiction examined. (* indicates books listed among Bestsellers in World Almanac, 1979-91.)

Author/s	Title	Year
Abrams, Bernard/Mike Harden	<i>Fight for life</i>	1987
* Anderson, Peggy	<i>Nurse</i>	1978
Anderson, Peggy	<i>Children's hospital</i>	1985
Barnard, Christiaan/ Curtis Pepper	<i>One life</i>	1969
Bombeck, Erma	<i>I want to grow hair</i>	1989
Cook, Fred	<i>Julia's story</i>	1974
Defoe, Daniel	<i>A journal of a plague year</i>	1908
DeFord, Frank	<i>Alex</i>	1983
Doelp, Alan	<i>In the blink of an eye</i>	1989
Dorris, Michael	<i>The broken cord</i>	1989
Franklin, Jon/ Alan Doelp	<i>Not quite a miracle</i>	1983
Franklin, Jon/ Alan Doelp	<i>Shocktrauma</i>	1980
Franklin, Jon/ Alan Doelp	<i>The guinea pig doctors</i>	1984
Frist, William	<i>Transplant</i>	1989
Fox, Ray Errol	<i>Angela Ambrosia</i>	1979
Gino, Carol	<i>Rusty's story</i>	1986
Gino, Carol	<i>The nurse's story</i>	1982
Graham, Jory	<i>In the company of others</i>	1982
Gunther, John	<i>Death be not proud</i>	1949
Heron, Echo	<i>Intensive care</i>	1987
Horowitz, Steve/ Neil Offen	<i>Calling Dr. Horowitz</i>	1977
Klass, Perri	<i>A not entirely benign procedure</i>	1987
Klass, Perri	<i>Baby doctor</i>	1992
Kleinfield, Sonny	<i>A machine called indomitable</i>	1985
Kolata, Gina	<i>The baby doctors</i>	1990
Kramer, Mark	<i>Invasive procedures</i>	1983
Lax, Eric	<i>Life and death on 10 West</i>	1984
Lear, Martha Weinman	<i>Heartsounds</i>	1980
McPhee, John	<i>Heirs of general medicine</i>	1984
Morgan, Elizabeth	<i>The making of a woman surgeon</i>	1980
Nolen, William	<i>Surgeon under the knife</i>	1976
* Radner, Gilda	<i>It's always something</i>	1989
Roueché, Berton	<i>Annals of epidemiology</i>	1953
Rollin, Betty	<i>First, you cry</i>	1976
Rosenberg, Steven/ John Barry	<i>The transformed cell</i>	1992
* Sacks, Oliver	<i>The man who mistook his wife for a hat</i>	1970
Selzer, Richard	<i>Confessions of a knife</i>	1979
Selzer, Richard	<i>Raising the dead</i>	1993
Severo, Richard	<i>Lisa H.</i>	1985

Table 2.1 Works of medical nonfiction examined (continued).

Author/s	Title	Year
Sheehan, Susan	<i>Is there no place on Earth for me?</i>	1983
Stone, John	<i>In the country of hearts</i>	1990
Storrer, Carol / Vicki Hesterman	<i>Walking home</i>	1982
Sylvester, Edward	<i>The healing blade</i>	1993
Thomas, Gordon/ Max Morgan-Witts	<i>Anatomy of an epidemic</i>	1982
Thomas, Lewis	<i>Lives of a cell</i>	1974
Thompson, Thomas	<i>Hearts</i>	1971
Watson, James	<i>The double helix</i>	1968
Weeder, Richard	<i>Surgeon</i>	1988

Lewis Thomas, John Stone, and Perri Klass. Jory Graham is an example of a journalist who writes essays in the medical field.

(3) Personal narratives: Books written by people who have undergone some medical crisis or who have been closely involved with someone else who has. John Gunther described his son's brain cancer; Frank DeFord and Bernard Abrams both wrote about their daughters' cystic fibrosis; Michael Dorris' son had fetal alcohol syndrome; Martha Weinman Lear's subject was her husband's heart disease; Betty Rollins described her experience with breast cancer; and Fred Cook's book is about his wife's death after open-heart surgery. Dozens of examples in this category are available, as any trip to a used book store will show. Many authors were (or still are) journalists before their involvement in the medical crisis their books describe.

A fourth category which overlaps somewhat with the previous two is:

(4) Doctors and nurses as writers: A surprising number of these books are on the market today. Essayists were mentioned above, but many physicians and nurses have written personal narratives about their lives as surgeons (Christiaan Barnard, Elizabeth Morgan, William Nolen, William Frist, Richard Weeder), as an intern (Steve Horowitz), as a medical student (Perri Klass), as a nurse (Carol Gino, Echo Heron) or as a pediatrician (Perri Klass). Steven Rosenberg and John Barry's *The Transformed Cell: Unlocking the Mysteries of Cancer* is both a personal narrative and an account of Rosenberg's research in immunotherapy techniques.

Table 2.2 lists books of essays, personal narratives, and books written by doctors or nurses.

(v) *The other books*

But what about books which are not essays, or were not written by people who have gone through the medical experience themselves? Those who write about their own personal experiences are, in a sense, "medical insiders." They are not writing as most journalists do—from the outside, through traditional journalistic methods of interviewing and observing.

Table 2.3 lists the works of nonfiction left after eliminating personal narratives and books by medical insiders.

These remaining books can be divided into two categories: those that are expository or conventional journalism and those that are literary journalism.

Table 2.2 Medical nonfiction: Essays (ES), personal narratives (PN), doctor/nurse authors (DN).

Type	Author/s	Title
PN	Abrams/Harden	<i>Fight for life</i>
PN/DN	Barnard/ Pepper	<i>One life</i>
PN	Cook	<i>Julia's story</i>
PN	DeFord	<i>Alex</i>
PN	Dorris	<i>The broken cord</i>
PN/DN	Frist	<i>Transplant</i>
ES	Franklin/Doelp	<i>Guinea pig doctors</i>
PN/DN	Gino	<i>Rusty's story</i>
DN	Gino	<i>The nurse's story</i>
ES	Graham	<i>In the company of others</i>
PN	Gunther	<i>Death be not proud</i>
DN	Heron	<i>Intensive care</i>
PN/DN	Horowitz/Offen	<i>Calling Dr. Horowitz</i>
PN/DN	Klass	<i>A not entirely benign procedure</i>
PN/DN	Klass	<i>Baby doctor</i>
PN	Lear	<i>Heartsounds</i>
PN/DN	Morgan	<i>The making of a woman surgeon</i>
PN/DN	Nolen	<i>Surgeon under the knife</i>
PN	Radner	<i>It's always something</i>
DN	Roueché	<i>Annals of epidemiology</i>
PN	Rollin	<i>First, you cry</i>
PN/DN	Rosenberg/Barry	<i>The transformed cell</i>
ES/DN	Sacks	<i>The man who mistook his wife for a hat</i>
ES/DN	Selzer	<i>Confessions of a knife</i>
PN/DN	Selzer	<i>Raising the dead</i>
PN	Storrer/Hesterman	<i>Walking home</i>
ES/DN	Thomas	<i>Lives of a cell</i>

Table 2.3. Medical nonfiction which is not essays, personal narratives, or written by a doctor/nurse.

Author/s	Title
Anderson	<i>Nurse</i>
Anderson	<i>Children's hospital</i>
Bombeck	<i>I want to grow hair</i>
Defoe	<i>A journal of a plague year</i>
Doelp	<i>In the blink of an eye</i>
Franklin/Doelp	<i>Not quite a miracle</i>
Franklin/Doelp	<i>Shocktrauma</i>
Fox	<i>Angela Ambrosia</i>
Kleinfeld	<i>A machine called indomitable</i>
Kolata	<i>The baby doctors</i>
Kramer	<i>Invasive procedures</i>
Lax	<i>Life and death on 10 West</i>
McPhee	<i>Heirs of general medicine</i>
Severo	<i>Lisa H.</i>
Sheehan	<i>Is there no place on Earth for me?</i>
Thomas/Morgan-Witts	<i>Anatomy of an epidemic</i>
Thompson	<i>Hearts</i>

‘Expository nonfiction’: books about events, people, or trends in the medical field presented as conventional mainstream prose; the author does not attempt to turn the account into a narrative, to include dialogue, status details, etc. The book is written in the objective third person voice and, for the most part, the author’s voice and experience do not appear.

In spite of Wolfe’s comments about conventional nonfiction’s boring and “pallid little troll”²³ of a voice, many of these books are lively and very readable. John McPhee’s *Heirs of General Medicine*, Gina Kolata’s *The Baby Doctors*, and Sonny Kleinfeld’s *A Machine Called Indomitable* stand out in particular.

Literary journalism: Connery’s justification for identifying literary journalism helps define this genre in medical nonfiction:

(a) *Is it journalism?*

- Is the material based on interviews, observation, and sources?
- Is the material timely?

(b) *Is it literary?*

- Does the author use some or all of the literary techniques mentioned in Chapter One such as: (1) a narrative approach? (2) interior monologue? (3) scene setting? (4) dialogue? (5) status details? (6) immersion? (7) personal voice? (8) literary devices (metaphors, etc.)?

In addition to Connery’s justification, literary journalism can be identified by asking:

What is the author’s intention?

- Is it to increase cultural understanding as Sims suggests?
- Or is it write literature as Lounsberry suggests?
- Is there a sense of personal mission?

And, most of all,

Is it a story?

- Do readers, in the words of Sara Davidson, buy the ticket and have to take the trip?²⁴

²³ Johnson and Wolfe, *The new journalism*, p. 17.

²⁴ Sims, *The literary journalists*, p. 25.

Since the medical world has progressed so far in a relatively short time, books written before 1979 were eliminated.

The examples which fit under these criteria and will be examined are listed in Table 2.4.

One book does not quite fit into this framework. Richard Weeder, author of *Surgeon: the View from Behind the Mask* is a surgeon who writes in the third person as if he were Stuart Cooper, the new surgeon at Bellefield Hospital. Although he is a medical insider, his book is written like a novel, and follows the protagonist's career from his early days of surgery to his decision to give up medicine. Weeder justifies his literary technique by saying,

I transposed this story of my surgical career to the third person. That device made it easier for me to identify with the reader and to be more candid about my feelings. Doing so also made it possible to depart from facts of time and circumstance in order to get as close as possible to deeper truths: what a doctor feels, what a nurse feels, what a patient feels. Last and most important, it facilitated changing the facts in order to protect my patients' privacy. No name is real and nothing happened just the way I wrote it. So do not, dear reader, try to identify yourself or anyone else with any story herein. Everyone you meet in these pages is none of us and, I hope, all of us, in our various moods and disguises.²⁵

The examples that "qualified" as literary journalism in medical nonfiction fell into several subcategories: (1) Surgery (2) Diseases and (3) Other Medical Specialties. Surgery is a rather pervasive topic as many diseases and specialties involve surgery of one kind or another. The books that went into the "surgery" category are specifically about the world of surgery and contain the word in their title. The books in the "disease" category are about the effects, treatment, and possible recovery from various diseases, some of which may have to do with surgery. Similarly, a medical specialty, such as pediatric trauma, may involve a surgical procedure, but surgery is not the specific focus of the book.

The next few chapters will examine the examples in each category.

²⁵ Weeder, Richard, 1988. *Surgeon: The view from behind the mask*. New York: Berkley Books, p. vi-vii.

Table 2.4. Books of literary journalism in medical nonfiction written 1979 to 1993.

Topic	Author/s	Title	Year
Surgery			
	Franklin/Doelp	<i>Not quite a miracle</i>	1983
	Kramer	<i>Invasive procedures</i>	1983
	Weeder	<i>Surgeon: the view behind the mask</i>	1989
	Sylvester	<i>The healing blade</i>	1993
Disease			
	Fox	<i>Angela Ambrosia</i>	1979
	Thomas/Morgan-Witts	<i>Anatomy of an epidemic</i>	1982
Other medical specialties			
	Franklin/Doelp	<i>Shocktrauma</i>	1980
	Doelp	<i>In the blink of an eye</i>	1989
	Lax	<i>Life and death on 10 West</i>	1984

Chapter Three

Surgery and Literary Journalism

Many works of medical nonfiction focus on surgery: Of the forty-eight books examined, nineteen were about surgeons, surgical techniques, or life after a particular kind of surgery. Why is this field so fascinating to writers? Perhaps it has to do with the drama involved; sometimes an operation is the only way to save a life. In other cases, the very act of operating may bring the patient closer to death than the original ailment.

Or maybe this genre's popularity has to do with the fact that surgery often extends the limits of scientific territory. (Two of the books even include the word "frontier" in their titles.)

Elements of mysticism and awe often prevail when people write about surgery. The "soul" is mentioned often by the writers, although rarely by surgeons. Jon Franklin wrote that neurosurgeons leave discussions about souls to priests and first-year medical students, but he did quote one brain surgeon advising a resident: "Don't ever pull on anything. Not ever. You don't know what it's attached to. It might be attached to something that's attached to something that's attached to the soul."¹

Perhaps some of this awe or mysticism has religious overtones and refers back to the era of medicine men trepanning human skulls to release the evil spirits.

Or maybe writers are fascinated by surgery's inherent gory nature and that surge of vicarious pain/revulsion/adrenaline many people feel when human flesh is penetrated by alien objects. Richard Weeder, a surgeon himself, wrote surgery is "on the face of it, a brutal act, like a bayonet stab—warlike, something done in the heat of

¹ Franklin, Jon and Alan Doelp. 1983. *Not quite a miracle: Brain surgeons and their patients on the frontier of medicine*. New York: Doubleday, p. i.

rage or the panic of self defense.”² And Robert Leachman, a cardiologist, described surgery as “a tremendous injury, a major insult. Surgery is like ... like being hit by a car!”³

The fascination for writers may also have something to do with the voyeuristic appeal of peering into two very private worlds: that of the surgical patient, and that of the men and women who have rarely allowed outsiders into the operating theater. In their acknowledgments, Franklin and Doelp thanked their surgeon subjects for having the “subtle courage” to let the authors “enter what traditionally has been a very private world. In being open, and in allowing us to portray them as they are, they admit to their humanity—and fallibility. No doubt they will be criticized by some of their colleagues for their candor, but we believe their experiences, honestly told, will bring honor to their profession and understanding to their patients.”⁴

Surgery may also appeal to writers because of the implication of a quick fix. Weeder referred to this idea when he wrote in *Surgeon: The View From Behind the Mask*: “Cooper recognized in himself that he was, like most surgeons, a Mr. Fixit. Always handy around the house, he’d been nicknamed that by his father when he was still a boy. And it remained important to his ego that he could ‘make all better,’ giving him a marvelous sense of power.”⁵

Given the success of books (as well as television programs) on surgery, that feeling of “making it all better” is important to consumers of medical entertainment as well.

Although many of the books were about surgery, even if only peripherally, only four fit the following definition of literary journalism:

- (a) They were published by medical outsiders from 1979 to 1993.
- (b) The writers used journalistic techniques.
- (c) The writers also used all or some of the following techniques: status details, immersion reporting, interior monologue, scene-by-scene construction, accuracy.

² Weeder, Richard S. 1988. *Surgeon: the view from behind the mask*. New York: the Berkeley Publishing Group, p. 9.

³ Thompson, Thomas. 1971. *Hearts: Of surgeons and transplants, miracles and disasters along the cardiac frontier*. New York: Fawcett Crest, p.84.

⁴ Franklin and Doelp, p. x.

⁵ Weeder, *Surgeon*, p. 167.

(d) The writers told *stories*.

The books included: Mark Kramer's *Invasive Procedures: A Year in the Life of Two Surgeons* (1983, Harper and Row), Jon Franklin and Alan Doelp's *Not Quite A Miracle: Brain Surgeons and their Patients on the Frontier of Medicine* (1983, Doubleday), Richard Weeder's *Surgeon: the View Behind the Mask* (1988, Berkley), and Edward J. Sylvester's *The Healing Blade: A Tale of Neurosurgery* (1993, Simon and Schuster).

(i) Mark Kramer, *Invasive Procedures: A Year in the Life of Two Surgeons*

It's probably not surprising Mark Kramer ended up writing books. His father was an attorney and a publisher, and his mother operated a book store. Kramer grew up in Brooklyn and studied English at Brandeis. George Orwell's *Down and Out in Paris and London* was his introduction to literary journalism, and he considers himself a second generation New Journalist. After graduating from Brandeis, he earned a master's degree in sociology from Columbia University in 1967. He then wrote for the Liberation News Service in New York.

When Kramer was 23, a lump appeared on his hip, which he had removed surgically. The growth was benign, but the experience changed the shape of his life:

Life had become odd. I went back to work, but I was like a child who having thought about how he walks, now stumbled at every step. I let things fall apart. After a few more months I was gone from New York, and was writing newspaper columns from a farm in the New England hills.⁶

The farm was in western Massachusetts, and Kramer farmed communally as a "country radical," while writing columns for the Cambridge *Phoenix*. He next became puzzled as to why rural America was dying and invested two years living and working on a small dairy farm in Massachusetts, a larger family-run hog farm in

⁶ Kramer, Mark. 1983. *Invasive procedures: A year in the life of two surgeons*. New York: Harper and Row, p. 6.

Iowa, and a 20,000 acre corporate farm in southern California. The result was *Three Farms: Making Milk, Meat and Money from the American Soil*, published in 1980.

The book was well reviewed, but, despite his interest in farming, Kramer had never forgotten his one alarming experience as a patient. “The power of doctors interested me; that strong pain had impressed me; and the dislocation and subsequent redefinition of body and being, of course still concerned me—nothing since has affected me so suddenly and profoundly as the work of that surgeon.”⁷

Fifteen years after his surgery, Kramer happened to talk with an experimental psychologist at a party. The man described his research which focused on patients who supposedly were unconscious, but actually could hear, react, and maybe even heal better or worse according to what the surgical staff said about them. Kramer’s reaction: “The conversation at the loud party reopened a closed topic and a few weeks later I was making plans to visit—to return in a sense—to see, to touch and try to understand whatever had cut me open and moved me out of town.”⁸

Thus this book is an example of a personal mission, one of the criteria for a work to be counted as literary journalism. Kramer used the proceeds from *Three Farms* and a Ford Foundation grant to spend the next three years—more saturation reporting—working on *Invasive Procedures: A Year in the World of Two Surgeons*. It is his account of observing Lars Andersson and Russell Stearne: “to understand, by paying attention to the people involved, some of the effects of some of the social, political, commercial, and technical changes in surgery, and that ultimately I was interested in how power works in [their] world.”⁹ Remarkably, not only did patients allow him to watch both their examinations and their surgeries, but both surgeons signed releases allowing him to write openly about them (their names have been changed).

For the most part, critics were favorable. Ellen Wilson of *Publishers Weekly* called Kramer’s book “unerringly sensitive and intelligent.”¹⁰

Willam A. Nolen, a surgeon himself and author of *The Making of a Surgeon*, said in the *Washington Post Book World*,

⁷ Kramer, *Invasive procedures*, p 7.

⁸ Kramer, *Invasive procedures*, p. 7.

⁹ Kramer, *Invasive procedures*, p. 8.

¹⁰ Wilson, Ellen. 1983 An incisive reporter operates on surgeons. *Publishers Weekly*, p. 93.

Kramer's book gives I think, a realistic view of how surgeons in private practice live and work. His descriptions of operating-room scenes, including the interplay between the nurses, anesthetists and doctors, [are] vivid and dramatic, but the drama isn't grossly exaggerated as is so often the case when the medical world is portrayed.¹¹

It would be interesting to find out what the surgeon subjects thought—neither appears in the book as a particularly charming individual, particularly Stearne, who thinks it's amusing to aim spurting arteries at student nurses, with the effect of a "hurled Bloody Mary."¹² Another quality that identifies this book as literary journalism is that Kramer doesn't hesitate to let the reader know what he thinks of either surgeon.

About midway through the book Kramer suddenly brings himself into the book as he discovers a possibly cancerous lump. This excerpt illustrates a difference of opinion among literary journalists in medicine: some, like Kramer, allow much of their own voice and reactions into the narrative. Although it could be argued the event adds drama, some writers have felt the author has no place in the story. Jon Franklin's 1979 article "Mrs. Kelley's Monster," which uses a lot of literary journalism techniques, won the first Pulitzer Prize for feature writing. It was reprinted in Friedman's *Scientists and Journalists: Reporting Science as News*, with Franklin's footnoted comments. At one point, the original article read, "'There's one chance out of three that we'll end up with a hell of a mess or a dead patient,' Dr. Ducker says." and Franklin advised in his footnote:

Says to whom? The reporter, of course. But imagine how awful it'd sound to say, "said to this reporter." Keep yourself out of the copy and let your subject talk directly through you to your reader. Remember as a feature writer who puts himself into the action, you are a surrogate for your reader, and your existence on the scene is totally unimportant.¹³

¹¹ Nolen, William A. 1983. Slices of life. *Washington Post Book World*, Aug. 28, p. 1, 13.

¹² Kramer, *Invasive procedures*, p. 105.

¹³ Franklin in Friedman, p. 272.

Later, he advised again, "Unless you're writing about yourself, *stay out of your story*."¹⁴

Kramer's topic is an important one. Ten thousand surgeons gather annually for the American College of Surgeons Clinical Congress—and that was only 10 percent of America's working surgeons in 1982, at the time Kramer was working on the book. Each surgeon generates tens or even hundreds of millions of dollars in medical costs and has an average annual of \$118,000 income, although some were double or triple that.

Yet when the average person is referred for surgery by his or her family doctor, that doctor has almost never seen the surgeon operate. The recommendation is based on hallway gossip and hearsay.

"Something you have to bear in mind about surgeons—some are lucky," says an internist who frequently refers patients to Stearne. "Just lucky. Two surgeons do everything right, and one gets better results. ... You can't put your finger on it, and say it's skill or judgment or care. ... After a while, you get to know who is lucky."¹⁵

Literary journalism helps the reader discriminate between luck and patience. Kramer has watched more than a hundred surgeries and he has reason to disagree with the internist. Two traits that distinguish the lucky surgeon from the unlucky, he says, are mechanical finesse and consistency. Those with mechanical finesse do all their manual chores neatly. Even their fourth grade valentines "no doubt arrived unwrinkled, and lacked any trace of white paste oozing between doily and backing."¹⁶

Most surgeries are routine to the point of being tedious. Kramer found that the "lucky" surgeons are also those who are consistent in patiently taking hours to get *all* the details right, even if they're the same boring details that took hours to do yesterday on someone else.

This same attention to detail is what makes Kramer's book a good example of literary journalism. Kramer certainly immersed himself in the book: Not only did he

¹⁴ Franklin in Friedman, p. 282.

¹⁵ Kramer, *Invasive procedures*, p. 9.

¹⁶ Kramer, *Invasive procedures*, p. 195.

watch many surgeries but he also interviewed patients, Andersson's surgical assistant, Andersson's father, Stearne's anesthesiologist, Stearne's mother, and both surgeons' wives and in addition to nurses on the staff. He watched surgeons try out electric scalpels on lumps of raw steak at the Surgeons' Clinical Congress and spent so much time with the surgeons they became open with him.

"You have to stay around a long time before people will let you get to know them," he told Norman Sims. "They're guarded the first time and second time and the first ten times. Then you get boring. They forget you're there. Or else they've had a chance to make you into something in their world. They make you into a surgical resident or they make you into a farmhand or a member of the family. And you let it happen."¹⁷

As an example of literary journalism, this book is particularly interesting in light of Kramer's comment:

I'm still excited about the form of literary journalism. It's like a Steinway piano. It's good enough for all the art I can put into it. You can put Glenn Gould on a Steinway and the Steinway is still better than Glenn Gould. It's good enough to hold all the art I can bring to it. And then some.¹⁸

[The selection for the anthology would include pp. 102-11 (Stearne's treatment of nurses and his surgery) and pp. 67-73 (Andersson's treatment of a mentally retarded patient and Kramer's follow-up visit).]

(ii) Jon Franklin and Alan Doelp, Not Quite a Miracle: Brain Surgeons and Their Patients on the Frontier of Medicine.

A hierarchy definitely exists among surgeons.

And neurosurgeons definitely know where they fit in—at the top.

To find out more about this field and the people who work in it, two writers from the Baltimore *Evening Sun*, Jon Franklin and Alan Doelp, followed four brain

¹⁷ Sims, *The literary journalists*, p. 11.

¹⁸ Sims, *The literary journalists*, p. 25.

surgeons: Dr. Tom Ducker and Dr. Michael Salcman at the University of Maryland Hospital, and Dr. Donlin Long and Dr. Kenneth Murray at Johns Hopkins. The authors also spent many hours with the surgeons' patients, including:

- Joe Trott, a college student with a surgically curable posterior fossa tumor;
- Tony Mastrostephano, a computer technician, with a glioblastoma multiforme tumor;
- Richard, a former addict, now working in a psychiatric treatment center, whose arteriovenous malformation (AVM) ruptures; and
- Josh, an 11-year-old boy, who needs surgery to reunite the nerves in his wrist incorrectly joined in a previous surgery.

Part of the brain surgeon's confidence (some might argue arrogance) may stem from the mystique generated by this three-pound lump of grayish goo known as the brain. Other surgeons find satisfaction in repairing hernias and taking out gall bladders, but these four men come close to sneering at general surgery. After all, "what was a gall bladder? A gall bladder was the organ of bile. The brain was the organ of personality! It took nine years of training before they'd give you a license to touch it."¹⁹ And later the authors add, "the brain is something more than a mere organ, and its magical qualities raise deep, philosophical questions—"²⁰

Michael Salcman says, "If you cut a leg off, your patient is still the same human being. ... If you remove a man's arm, he's still the same human being. But if something goes wrong in a brain operation on Uncle Charlie, he may no longer be Uncle Charlie. ... There is nothing subtle about a neurosurgical disaster."²¹

With this tremendous responsibility comes the need to get rid of tension. One man gardens furiously, another is passionate about music, particularly opera. The third, Tom Ducker, finds his release in sailing. The authors write:

One thing a neurosurgeon learned, early in his career, was that you needed something, something different, something free, like tacking into a September breeze, the Chesapeake Bay Bridge on the horizon, an eye to a distant bank of

¹⁹ Franklin and Doelp, *Not quite a miracle*, p. 161.

²⁰ Franklin and Doelp, *Not quite a miracle*, p. 23.

²¹ Franklin and Doelp, *Not quite a miracle*, p. 152.

clouds, wind howling through the slot, deck tilted at a forty-five-degree angle, wheel firmly in his hands ... you needed that or something like it.

If you didn't have it, you might find you didn't have what it took to go into the operating room. If you didn't have it, you might try to find it in a bottle, or in ego, and then you might touch something that shouldn't be disturbed, and someone might die.²²

This excerpt about Ducker also demonstrates another aspect of literary journalism. These two paragraphs have been created by writers who want to push beyond just the facts, who enjoy bending phrases, molding sentences, and caressing words into specific rhythms.

The excerpt is also written from inside the head of the neurosurgeon—a practice discouraged in many newsrooms. Yet this very quality is part of what draws readers to Franklin and Doelp's characters and makes us care about them. We are inside Richard's head when the AVM ruptures as he's trying to drive his Camaro to the convenience store, and we feel his confusion as the cooler door won't open and his fingers won't wrap around the 7-Up bottle. These are the status details Wolfe described, and they serve to give readers a clearer picture of the characters. We have a different idea of who Richard is because of the 7-Up and the Camaro than if he drove BMW and selected a Clearly Canadian.

Later, we share his rage when the resident tries to tip him off the examining table to check his reflexes.

However, not everyone believes writing from within the character is effective or even honest. Charles Leroux of the *Chicago Tribune* dislikes scenes which were not observed, but written as if the writer were there. He calls it "reconstructive reporting" and says the authors "don't need to be hussying up this story. It's a natural beauty." He adds that *Not Quite a Miracle* "has a surgical sharpness that makes the mushy stuff seem all the more unworthy."²³

Robin Henig in the *Washington Post Book World* had reservations about the technique but wrote "the personal background supplied for our heroes might have been awkwardly handled, but it did indeed turn them into more than cardboard actors. ...

²² Franklin and Doelp, *Not quite a miracle*, p. 134.

²³ Leroux, Charles. 1983. 'Not Quite a Miracle,' But a Fine Book. *Chicago Tribune*, March 23, p.5.

By the end of the book, I really cared about the characters.” She added that she couldn’t put the book down and “read the blow-by-blows of their operations *as though I were reading a novel* [italics added].”²⁴

William K. Beatty, in a review for the *Library Journal*, didn’t agree the background material was awkwardly handled; he felt the flashbacks were pertinent and “fit neatly into this tautly written story.” He called the book “fascinating” and said it would “attract readers in public, college, and high school libraries.”²⁵

Many literary journalists want to let the reader know “what it’s like,” and these authors are no exception. In their acknowledgments, Franklin and Doelp wrote,

We took special pains to make the book accurate in context as well as fact. Our aim was more than just to tell stories; we wanted to give the reader a perception of what it is like to enter the operating room, what it is like to be a brain surgeon, what it’s like to sit on the edge of your bed the night before the operation and think about what the morning will bring.²⁶

Franklin also wanted readers to know “what it’s like. He discussed the importance of details, flashbacks, and emotion in Sharon Friedman’s book, *Scientists and Journalists: Reporting Science as News*. Here he was writing about animal research and the monkeys at Silver Springs:

We have to take readers into science the way John Steinbeck took them into Oklahoma.

Only by using emotion, and literary structure, can we send our truths in through the blind eye of the hurricane [of ignorance] and calm it. ... It’s time to tell the whole story, all of it, at the same time, about the people who suffer from the diseases these men and women are trying to understand, using monkeys. Let’s tell the story of the people whose lives are destroyed, who die in agony from such diseases.

²⁴ Henig, Robin Marantz. 1983. Where surgery meets the soul. *Washington Post Book World*. April 17, p. 1, 13.

²⁵ Beatty, William K. 1983. Franklin, Jon and Alan Doelp. *Library Journal*, Jan. 15, p. 140.

²⁶ Franklin and Doelp, *Not quite a miracle*, p. ix.

Let's take the reader into the hospital, if we have to, and let them hear the screams.²⁷

The writer can't be there for every scream: occasionally, some things have to be reconstructed to keep and control the reader's emotion.

In 1987, Franklin published another book, *Molecules of the Mind: The Brave New Science of Molecular Psychology*.²⁸ One of the reviewers, *New York Times* contributor Barry L. Jacobs, wrote Franklin's "goal is to make us aware of this revolution so that we can monitor it and especially so that we can take part in it and make decisions."²⁹

The same could be said about *Not Quite a Miracle*.

[The selection for the anthology would include pp. 127-130 (Chapter 12), which describes the rupturing of Richard's AVM.]

(iii) Richard S. Weeder, M.D., Surgeon: The View From Behind the Mask

Although several books about surgery have been written by surgeons, Weeder's book is the only one included in this selection of literary journalism. Weeder himself explains one reason; he says surgeons are "doers more than thinkers, expressing themselves with hands rather than voices. For one to write a book is a bit like a bear dancing."³⁰

²⁷ Franklin, Jonathon in Friedman, Sharon M., Sharon Dunwoody, and Carol L. Rogers (eds.) 1986. *Scientists and journalists: Reporting Science as News*. New York: American Association for the Advancement of Science, p. 145.

²⁸ Franklin, Jon. *Molecules of the Mind: The Brave New Science of Molecular Psychology*. New York: Atheneum.

²⁹ Jacobs, Barry L. 1987. *The New York Times Book Review*, February 22. In May, Hal and James Glesniak (eds.) *Contemporary authors (new revision series): a bio-bibliographical guide to current writers in fiction, general nonfiction, poetry, journalism, drama, motion pictures, television, and other fields*, Gale Research Inc.: Detroit, vol. 118, p. 458.

³⁰ Weeder, *Surgeon*, p. xi.

Yet, remembering that literary journalism is nonfiction that uses the techniques of fiction, *Surgeon: The View From Behind the Mask* is, in a way, a purer example of literary journalism than many of the other books listed here. In his preface, Weeder explains he wrote the book for himself because describing “what you’ve done and why you did it can be hard, but it’s a useful way to keep one centered on life, to make sense out of chaos.”³¹ Thus we again see personal mission as a motive.

Weeder also wanted to write it for “you, the reader, that you might enter into the life that is a surgical practice, sharing its joys and sorrows, learning what we learn who are privileged to invade with the knife the body and soul of others.”³² His intention he says, was to demystify the relationship between patients and surgeons:

I am trying to demystify medicine and particularly surgery ... Keeping it mysterious tends to increase the rift between doctors and patients. If we understand each other better, the patient can respond better.³³

In order to help the reader enter into that life, Weeder deliberately transposed his story to the third person because:

That device made it easier for me to identify with the reader and to be more candid about my feelings. Doing so also made it possible to depart from facts of time and circumstance in order to get as close as possible to deeper truths: what a doctor feels, what a nurse feels, what a patient feels. Last, and most important, it facilitated changing the facts in order to protect my patients’ privacy. No name is real and nothing happened just the way I wrote it.³⁴

The book follows the career of young Stuart Cooper, a new surgeon at Bellefield Hospital somewhere in Connecticut. He is a graduate of Penn Med recently returned from Japan where he was an army surgeon. (Weeder himself is a graduate of the University of Pennsylvania Medical School and spent two years in Japan treating Vietnam War casualties.)

³¹ Weeder, *Surgeon*, p. vii.

³² Weeder, *Surgeon*, p. vii.

³³ Lopez, Dennis. 1988. Chekhov’s two mistresses. *Time Off*, June 22, p. 1.

³⁴ Weeder, *Surgeon*, p. vii-viii.

Weeder as Cooper tells the stories of twelve patients, including a young woman burned over 100 percent of her body, a man paralyzed after diving into the shallow end of a pool, a 70-year-old man with a stomach tumor, a 13-year-old brain-dead girl, a young woman with breast cancer, and a middle-aged woman with an atypical case of gall bladder disease.

In each case, Weeder gives a vivid picture of the patients, the effect the surgery has on their lives, and of the surgery itself. The reader receives a painless introduction to surgical techniques and rationales.

In one chapter, Weeder writes about the parallels between surgery and opera: he psyches himself up for a surgery much as an opera star does for a major performance. As his character, Cooper, explains to the resident:

“We don’t do an operation,” he said, “we *perform* one. We prepare for it, sometimes even rehearsing. We set a special time for its performance. We assemble a cast. ... And the words opera and operation even come from the same root,” he continued. “Then we dress up for the part, wearing an outlandish costume, complete with a mask.”

She nodded.

“And you remember, they used to call these places operating theaters, not operating rooms.”³⁵

This particular excerpt shows the weakness of this book: Weeder’s dialogue is somewhat contrived, and the reader occasionally feels lectured at, rather than pulled into the story.

During the same conversation, Cooper talks about the distance between surgeon and patient: “The gowns, gloves, and drapes distance us emotionally as well as bacteriologically. We don’t see the patient; he doesn’t see us. We don’t feel the patient; he doesn’t feel us.” He asks the resident if she has ever operated bare handed. When she says no, he says, “Try it sometime in the lab. Gives you the willies.”³⁶

Weeder discusses the mask and emotional distance again later in the book while describing the examination of a patient whose breast tumor proves to be malignant:

³⁵ Weeder, *Surgeon*, p. 32.

³⁶ Weeder, *Surgeon*, p. 35.

As he did so, he wiped his face clean of emotion, trying to mimic a poker player. *Any expression will be wrong, he thought, probably misunderstood. To frown is wrong; to smile is wrong; to look too confident is wrong; to look puzzled is wrong. All wrong.* The muscles in his face were tight beneath the mask he'd made.³⁷

Here we see Wolfe's interior monologue, or writing from inside the character's head.

Like many surgeons, Cooper is also the son of surgeon, and on this centers most of the book's conflict. Cooper's father believed general surgery is "the finest thing a man can do." He was "of heroic stature, and the son's awe had been ratified by the opinions of too many others for Cooper to dismiss it as the usual son's veneration."³⁸ Both Stuart and his brother, who also became a surgeon, were steeped in surgery from early childhood since their father's office was in their house. Cooper Senior took the boys to the operating room when they were seven, and by the time they were twelve, they had both scrubbed and assisted in many operations.

At issue here is Cooper's father's need for control—control over his operating room, his hospital, his wife, his sons. At one point in his training, Stuart decided he wanted to be a plastic surgeon: "There was much that was creative in rebuilding damaged faces or improving unattractive ones. And the burns were fascinating, the research mind-stretching, the care of the patients themselves spiritually challenging." His father refused to allow it, to the point of pounding the dining room table, saying, "You will not become a plastic surgeon; you will be a general surgeon."³⁹

This issue of control reappears often in books about surgeons. In *Not Quite a Miracle*, Franklin and Doelp write: "The demands of brain surgery are not unlike those of war, insofar as they do not lend themselves to democracy. In Michael Salcman's operating room everything had to be perfect, absolutely perfect, and that meant somebody had to be in charge. That person, legally, morally, and professionally, was Dr. Salcman."⁴⁰

³⁷ Weeder, *Surgeon*, p. 64.

³⁸ Weeder, *Surgeon*, p. 17.

³⁹ Weeder, *Surgeon*, p. 48.

⁴⁰ Franklin and Doelp, p. 66.

Stuart Cooper is convinced his father never agonized over cases the way he does and says even from the beginning of his practice he wasn't sure he wanted to stay in surgery. That soul-searching eventually brings on the end of Cooper's (and Weeder's?) surgical career. After ten years of building his practice, he gets a chance to take a sabbatical from the hospital and spends a semester at a private high school teaching a course which explores the relationship between religion and psychology. Although he doesn't get the same kind of response he had from curing patients, he does find a kind of joy that he had been missing in surgery. And, in a way, he finds he is still a healer, "prescribing deep cuts in unhealthy relationships or soothing balm to traumatized self-respect."⁴¹

His father felt his change of heart was a great mistake and according to Cooper, "they never wrapped it up right,"⁴² which may explain much of Weeder's need to write this book.

The use of fiction-writing techniques confused reviewers, and they were uncertain what to call this work. The *Flemington/Clinton Family News* said it was an "exposé of the feelings of an surgeon,"⁴³ the reviewer for the *Trentonian* called it a third person memoir,⁴⁴ and Beth Orenstein of the (Easton, Penn.) *Express* called it an autobiographical novel.⁴⁵ The Princeton *Alumni Weekly* called it a "hybrid of memoir and novel," but went on to say, "His fictional structure, however, never blurs the sharpness of his clinical descriptions, which powerfully convey the emotional turmoil that may lie beneath a doctor's seemingly unflappable exterior."⁴⁶

[The anthology would include pp. 143-159 (Chapter 11 "The Crock,"), about the woman whom no one believed.]

⁴¹ Weeder, *Surgeon*, p. 187.

⁴² Weeder, *Surgeon*, p. 196.

⁴³ Fiedler, Cheryl. 1988. HMC surgeon authors book. *Fleming/Clinton Family News*, June 28, p. 1.

⁴⁴ The pitfalls of specialization. 1988. *The Trentonian*, June 1, p. 1.

⁴⁵ Orenstein, Beth. 1988. The unmasking of a surgeon. *Easton (Pa.) Express*, Aug., 19, p.1.

⁴⁶ Medicine for the doctor. 1988. *Princeton Alumni Weekly*, Sept. 14, p. 7.

(iv) **Edward J. Sylvester: The Healing Blade: A Tale of Neurosurgery.**

What goes on inside brain surgeons' brains? What makes them go? Monumental ego? Or, in the words of Peter Raudzens, chief of neuroanesthesia, big brass balls? To crack open a living human's skull and put a razor to his brain. Make that his soul. What kind of people do that for a living?⁴⁷

These are the questions that Edward Sylvester, a journalism professor at Arizona State University, wants answered. To find out, he spent "hundreds of days and nights" at Barrow Neurological Institute in Phoenix watching surgeries, following residents to the emergency room, and interviewing dozens of patients. He then tells their stories:

- T.J. Mathias is a 10-year-old boy who was hit by a truck and whose neck was severed, leaving his head attached only by skin, muscle, and spinal cord;
- Jack Schulte is a 64-year-old man, who is felled by a stroke while attempting to fell a saguaro in his front yard;
- Jennifer Turner is a single mother with a massive aneurysm; and
- Hassan and Salem El Refai are active, agile 3-year-old twins who are joined by the crown of their heads and brains.

What all these stories have in common is near-impossible neurosurgery, a surgeon who is willing to perform it, and patients who have no other options. The surgeon is Robert Friederich Spetzler, now 49, who Sylvester describes as "among the very best in the world at what he does."⁴⁸ Physically gifted with tremendous endurance, he also has the ability to be totally focused, and has more skill than most to be able to translate two-dimensional x-rays and CT images into three-dimensional tissues in his mind's eye. That last ability may be the most important asset for a surgeon, because neurosurgery, is, more than anything, a game of navigation and geography: "Symptoms in the brain do not tell what is wrong; they tell where to look. The history of neurosurgery is the history of cerebral localization, which is the history of reading signs and symptoms and inferring where to operate."⁴⁹

⁴⁷ Sylvester, Edward J. 1993. *The healing blade: a tale of neurosurgery*. New York: Simon and Schuster, p. 13.

⁴⁸ Sylvester, *The healing blade*, p. 44.

⁴⁹ Sylvester, *The healing blade*, p. 86.

But not losing your place is only one of the hazards for neurosurgeons—another is losing the patient to bleeding. How can you operate deep in the brain without the risk of cutting too many of the fine but vital veins? And how can you tie off an aneurysm (basically a weak spot in an artery, like a bubble on a car tire) without the risk of its bursting and instantly killing the patient? One way to make the surgery possible would be, if only you could, to drain the blood out of the body.

And a few surgeons, Spetzler among them, can now do just that. Sylvester describes the process of hyperthermic arrest, known colloquially as “standstill,” in lucid informative prose:

The patient would be put into a barbituate coma, to radically cut his brain's use of oxygen. His blood then would be circulated through a bypass pump and his heart stopped, just as in heart-bypass surgery. Then the blood would be chilled, pumped back in to the body to refrigerate the brain far below room temperature. ... once the proper low brain temperature was reached, the blood would be drained from his body instead of continuing to circulate on a bypass pump.

Now for a period of up to an hour, no blood and therefore no oxygen would reach any cell in the patient's brain or any other organ. *You know the technical term for that condition*, one of the neurosurgeons had quipped. *It's called death.* Indeed, Schulte would be, by any medical definition, dead.”⁵⁰

Sylvester alternates between the stories of the patients and giving much technical information in understandable prose. Just as the reader starts to get bogged down in brain geography, Sylvester switches back to storytelling. The reader has again bought Sara Davidson's ticket, absorbing a good deal of neuroanatomy, surgical history, and medical politics along the way. Sylvester gets us involved in TJ's story, then inserts a definition of CT and MRI scans. The information, though complicated, helps us understand TJ's situation better, and now suddenly we care about low magnetic MRI because we care how it will affect TJ.

Sylvester also helps us along with active verbs and lively word pictures, indicated in bold face:

⁵⁰ Sylvester, *The healing blade*, p. 24.

The EEG signals now spiking across Jennifer Turner's green monitor carry an electrical potential of fifty to eighty microvolts. If that represents the simultaneous firing of just 10 percent of the 100 billion nerve cells, you get some idea of the incredible fineness of the brain's electrical system. (It is estimated that a plain steel door has a magnetic field a million times that of the brain.) It is as though we are flying over a meadow of 10 billion fireflies and see, instead of random patterns of sparks, a steady drumbeat of almost perfectly coordinated flashes.⁵¹

Laurie Bartolini, a reviewer for the *Library Journal*, says that despite "a rough, occasionally careless style, Sylvester knows how to maintain an effective rhythm and tell a good story."⁵² Genevieve Stuttaford of *Publishers Weekly* describes *The Healing Blade* as "an immediate, thorough and lucid chronicle" and gave it a starred review (which "designates books of unusual interest and merit"). She says "the author's precise prose and apt imagery bare the interaction between staff members and patients linked by this exact and problematic surgery."⁵³

One of the biggest issues in this problematic surgery is: now that we can bring some dead people back, where is the line of death? Is there value to the standstill procedure if the patient returns, but only to some dubious definition of life, not to being the person he was before the surgery? This kind of thorny issue is one reason that journalists and other medical outsiders are perhaps better at writing this kind of book than the surgeons themselves.

Edward Sylvester is the son of a newspaperman and a New Jersey native. In 1973 he moved to Tucson where he was a reporter then an editor at the *Tucson Citizen*, then the *Arizona Daily Star*. Later he worked at the *Los Angeles Times*, then moved to Tempe, where he's been since 1980. *The Healing Blade* is his third book; the first was *The Gene Age: Genetic Engineering* followed by the *Next Industrial Revolution*, which he collaborated on with Lynn Klotz, his former college roommate. In 1986, he wrote *Target: Cancer*. He told *Contemporary Authors*, "I've had a life long interest in science. My first book enabled me to continue exploring the explosive

⁵¹ Sylvester, *The healing blade*, p. 115.

⁵² Bartolini, Laurie. 1993. The healing blade: a tale of neurosurgery. *Library Journal*, Jan., p. 156.

⁵³ Stuttaford, Genevieve. 1992. Forecasts. *Publishers Weekly*, November 23, p. 45.

development in the life sciences, as it is reflected in *Target: Cancer*. I plan to continue writing in the field of science.”⁵⁴

[The anthology would include pp. 61-77 of The Healing Blade {see Appendix I}, in which Sylvester describes TJ's accident and arrival at Barrow.]

⁵⁴ May, Hal and James G. Lesniak (eds.) In *Contemporary authors (new revision series): a bibliographical guide to current writers in fiction, general nonfiction, poetry, journalism, drama, motion pictures, television, and other fields*, Gale Research Inc.: Detroit, vol. 118, p. 458.

Chapter Four

Literary Journalism and Disease

Of the forty-eight books read, fourteen were about some type of disease, and of those, ten were personal experience books or books written by medical personnel. Of the remaining four, one was Daniel Defoe's *Journal of a Plague Year*, written before the scope of this study, and another, Richard Severo's *Lisa H.*, was a lengthy expository piece. The only book listed in the *World Almanac* about a specific disease was Gilda Radner's *It's Always Something*. Since her work was a personal experience book, it doesn't fit this definition of literary journalism.

Only two books were examples of literary journalism and disease. One reason for the shortage of books is that disease may not be a particularly appealing topic—for readers and writers. Even Ray Errol Fox, author of *Angela Ambrosia*, whose protagonist has leukemia, writes: "Sickness—anyone's—sickens me; disease suffocates and makes my mind crawl."¹ Some think it's morbid to dwell on illness, particularly terminal illness. And other people are afraid to read—or to write—too much about disease. Fox says, "When I was asked to listen to this story, my first impulse was to cover my ears. By listening to it, I could, I might, catch it."²

At the same time, television has shown so many "disease of the week" specials that some viewers have become hardened, and many people think they know as much as they ever want to about disease, particularly cancer.

Writing about disease is also particularly difficult to do well. One of the differences between literary and mainstream journalism is emotion; as the author's

¹ Fox, Ray Errol. 1979. *Angela Ambrosia*. New York: Alfred A. Knopf, p. 7.

² Fox, *Angela Ambrosia*, p. 5

voice increases, so does his involvement. It can become increasingly difficult to walk that tenuous line between an overly sentimental heartwarming miracle book (when the victim survives) and the equally overly sentimental tearjerking book (when the victim dies in the last chapter).

Both books whose subject was disease which qualified as literary journalism were written not only by medical outsiders, but also by journalistic outsiders—which demonstrates literary journalism's broad cross-disciplinary appeal. Ray Errol Fox is a playwright, music publisher, lyricist, and theatre and dance critic, whose first book was *Angela Ambrosia*. Gordon Thomas and Max Morgan-Witts, who wrote *Anatomy of an Epidemic*, are social historians. Both Thomas and Morgan-Witts live in Europe, which may have been a better vantage point from which to watch the effect of Legionnaires' disease on America's 1976 patriotic frenzy.

(i) Gordon Thomas and Max Morgan-Witts: *Anatomy of an Epidemic*

What novelist wouldn't be tempted by these plot ingredients : a mysterious killer, an elegant (but dying) hotel, a dedicated and inscrutable detective, a young (and attractive) woman torn between love and the rules of the Catholic church, and another young (and attractive) woman determined to exceed her record of making \$600 a day as a prostitute. Add to these the backdrop of Bicentennial pride, the paranoia of post-Watergate America, and the ambiance of the city of Philadelphia—and make the mysterious killer an unknown disease that claims 221 victims.

Anatomy of an Epidemic examines how Legionnaires' disease surfaced in the Bellevue Stratford Hotel in Philadelphia in 1976. To tell the story, the authors narrate from the point of view of many, some seemingly minor, characters: Jimmy Dolan and J.B. Ralph, two of the legionnaires who eventually died; Doris Fetterhoff, Jimmy's girlfriend; David Fraser, the CDC doctor and medical detective assigned to the case; Harold Varr and Bill Chadwick, two of the hotel's administrators; Dr. Leonard Bachman, Pennsylvania's secretary of health; and William Parkin, DVM, a state epidemiologist; and even Dale Hoover, the undertaker who prepared Jimmy and J.B.'s bodies for their funerals.

In their introduction, the authors say,

This is a story of fear: of the familiar becoming a source of sudden terror; of ordinary, everyday aids to modern living—air-conditioning units, refrigerators, even chemically treated tap water—taking on totally unexpected connotations. And like the plague, the dreaded Black Death of medieval times that even now is not yet completely eradicated, the outbreak brought to the surface primeval emotions thought to be extinct.³

This begins to sound more and more like a novel, yet the authors go on to say:

As well as the usual research tools—official records, memoranda, a wide variety of published and private material, and our own personal observations—our main resource, as with our previous works, has been people. Most of the interviews conducted for this book were with eyewitnesses who had not been questioned before or who felt they could now speak more freely because a decent interval had elapsed. And because their story is authentic, often there can be no simple explanation for the way those people behaved. Theirs, though, is the truth of honest recall.⁴

Once again, we see those important characteristics of literary journalism: the narrative appeal of a *story* combined with the impact of *fact*. And once again, the characterization developed with the help of Tom Wolfe's status details makes us care about the people involved. We find out how much J.B. Ralph, the former editor of the town's newspaper, cared about the wife who divorced him as we watch his rambunctious decline into alcoholic pranks, including shaving his head: "From time to time, he wondered what effect his baldness would have on his mother, his friends, and his enemies. Nowadays he frequently felt there was little left in his life except to shock, anger, or amuse people."⁵

We get to know and care about the "shaggy-haired, raw-boned [David] Fraser, who had a penchant for wearing desert boots and an open-neck shirt to the office [and is] far removed from the traditional image of a doctor."⁶ Fraser is a graduate of

³ Gordon, Thomas and Max Morgan-Witts. 1982. *Anatomy of an epidemic*. Garden City, N.Y.: Doubleday & Co., p. xiv.

⁴ Thomas and Morgan-Witts, *Anatomy of an epidemic*, p. xv.

⁵ Thomas and Morgan-Witts, *Anatomy of an epidemic*, p. 15.

⁶ Thomas and Morgan-Witts, *Anatomy of an epidemic*, p. 4.

Harvard Medical School and a Quaker who rides his bike four miles to work, then wrestles with government paperwork about where to keep the bicycle.

We meet Doris: “twenty-seven years old, a devout Roman Catholic, a divorcée and the mother of three small children. She had fair hair and skin that glowed with energy from a healthy diet and regular exercise. There was something earthy and immediately sexy about her.”⁷

Doris, J.B., and Jimmy all live in the small town of Williamstown, Penn., population 1,917. (The town’s size may partly explain its intense interest in Doris’ and Jimmy’s living arrangement: they have been living together for five years and, for the past year, both have been celibate, a situation required by the local pastor until Doris’s divorce is approved by the Church. Only then can they marry and “regularize” their relationship.)

Two of the epidemiologists become involved in the narrative: Phil Graitcer, a dentist and a runner, who broke his foot in the annual Atlanta Peachtree roadrace; and Theodore Tsai, quiet, slender, born in Nanking, who spends all his off-duty hours helping his red-haired American wife clean and decorate their new house.

Dale Hoover, the undertaker who works downstairs from J.B.’s mother, “was a big, bluff man, fortyish, with surprisingly lively eyes for a person who made a living handling the dead. He saw himself as a grief specialist and memorial counselor, an undertaker who used the very latest in technology and know-how to help him create a more life-like appearance in corpses than did most other funeral merchants.”⁸

Reading this book is like following a soap opera—and is almost as addictive. The sequence of events and the readers’ involvement with the characters allow us to plow on through some difficult and occasionally unsavory medical details to find the answer to the question: “Well, what happened?”—although we already know. By the end of the book, we know the disease is caused by the bacterium *Legionella pneumophila*, and the symptoms include headaches, high fever, body aches, and a wracking cough. We know death results from pneumonia, or a clogging of the lungs, and we know those inflamed lungs can end up weighing four times their normal

⁷ Thomas and Morgan-Witts, *Anatomy of an epidemic*, p. 8.

⁸ Thomas and Morgan-Witts, *Anatomy of an epidemic*, p. 33.

weight and looking “like Brillo pads.” We even know the disease is treated with erythromycin.

But, more importantly, we know although Legionnaires’ disease has dropped from the media agenda, it is still prevalent, and as of 1982, according to these authors, killed 70,000 people a year. Reading a book like this might even pique our interest enough to ask: whatever happened to Legionnaires’ disease after 1982? Is it still around? According to the 1993 online edition of the *American Academic Encyclopedia*, the disease is a noninfectious respiratory illness in which the bacteria contaminate damp areas (such as cooling towers for air conditioners).⁹ It is spread by water vapor in the air which people then inhale, and it still affects an estimated 25,000-50,000 people in the United States annually with a 15 percent mortality rate. Erythromycin is still used to treat it.¹⁰

Learning what causes J.B.’s Legionnaires’ disease, how a rupturing arteriovenous malformation affects Richard, or how Robert Spetzler operates on the brain stem does more than build readers’ knowledge of specific ailments—it builds a framework of medical knowledge to which readers can add as they read anything from novels to the daily newspaper. Readers are medical consumers too, and ultimately, the knowledge they pick up can serve as a weapon in their own defense if and when their own medical world goes awry.

[The selection for anthology would include pp. 110-124 about J.B.’s autopsy, Graitcer, Varr, Doris, Bachman, and Dale Hoover.]

(ii) Ray Errol Fox, Angela Ambrosia

To look at me, you wouldn’t know that I’ve been dead for ten years. I became two Angelas—the high school kid and the girl with the anesthetized knowledge of death.¹¹

⁹ Hotel air conditioners are not the only home of *L. pneumophila*, as Richard Selzer, the noted surgeon and writer, found out a couple of years ago. His latest book, *Raising the Dead*, chronicles his recovery from Legionnaires’ disease, which he probably contracted from the air conditioner of an airplane. (Selzer, Richard. 1993. *Raising the dead*. Knoxville, Tenn.: Grand Rounds Press.)

¹⁰ *American Academic Encyclopedia*, online edition, Grolier Electronic Publishing, Danbury CT.

¹¹ Fox, *Angela Ambrosia*, p. 7.

So Angela Ambrosia—her real name—introduces herself to Ray Errol Fox over lunch while asking him to write this book. “I don’t ever remember being well,” she says. Finally, at 16, she was taken to the doctor to prove that she was not the one who had given her cousin mononucleiosis. The diagnosis came back: “no” to mono, but “yes” to chronic myelogenous leukemia—and yes to a life expectancy of six months at a time when leukemia was almost always fatal.

Angela’s parents were adamant that she not be told her diagnosis, even to the point of sacrificing her education, telling her only “something is not quite right with your blood.” Her doctor, Dr. Monroe Dowling, wanted her to know what she had, but the family threatened to take her to someone else, and even to sue, if he told her. When Angela was nineteen and about to be married, she confronted Dowling and at last he told her the truth.

Amazingly, until then, no one, not even nurses or other patients, gave the secret away, and almost equally astoundingly, this bright teenager didn’t ask the obvious questions:

Before Angela had to come to terms with the prospect of death, her death, she had to face—or shy away from—its prospective cause. A healthy mind in an unhealthy body, she denied her disease. With an instinct that knowledge could be harmful to mind and body, she learned to overlook every clue. Even while she held the magnifying glass to others. Even when she followed the tracks and the paths crossed. For four years, for Angela, denial was practically synonymous with survival.¹²

For nearly four years, Angela alternated between living at home in her Italian-Catholic Brooklyn neighborhood and living on the fourth floor of Manhattan’s Memorial Sloan-Kettering Cancer Research Center.

Throughout, in this cloud of obfuscation and denial, she had to continue to grow up and to wrestle with all the normal teenage quandaries: what to wear, whom to hang out with, how to deal with her own developing sexuality. Although her interests and school friends were in the drama workshop in Brooklyn, “real” life was at Sloan

¹² Fox, *Angela Ambrosia*, p. 62.

Kettering, and her real friends were the ones on the ward dying of cancer. While other girls in 1968 were infatuated with the Beatles, Angela was in love with her oncologist. And “while other girls her age spent endless hours in front of their bathroom mirrors primping for dates, Angela fussed and worried about the neatness of the tubes coming out of her arms.”¹³

As mentioned in Chapter Three, medicine seems to have a way of demanding the author’s involvement, and stories about cancer have an even stronger pull on authors than those of surgery (see Chapter Five), particularly stories about young people with cancer. Part of this effect is due to the patients themselves. Erma Bombeck, author of *I Want to Grow Hair, I Want to Grow Up, I Want to Go to Boise*, interviewed hundreds of children with cancer and wrote in her introduction: “Somehow I knew when I finished this book, I would never be the same person I was when I started it.”¹⁴ At the end of the book, she writes:

I told you in the introduction to this book that I suspected I would not be the same person at the end as I was when I started writing it.
I got that part right.¹⁵

Fox was also affected by Angela’s story and could not resist including his own reactions:

She wants her story to be written. I write to stay alive, to live a little longer than I can live life. She wants her story to be written for the same reasons. ...

She wants it written so that some will know there is hope. And others will understand: she describes the prejudice that accompanies disease and seeks my concurrence in condemning a relative for having once kept special, secretly marked dishes for her visits. ...

She asks, “Will you do it?” I think: I am the unlikeliest person in the world to write this book. Sickness—anyone’s—sickens me; disease suffocates and makes my mind crawl. For death, there are no words. “Will you?” But this is life—insistent and irresistible. I know her pretty well by now; I gulp and suggest that

¹³ Fox, *Angela Ambrosia*, p. 19.

¹⁴ Bombeck, Erma. 1989. *I want to grow hair, I want to grow up, I want to go to Boise*, New York: Harper and Row, p. xxii.

¹⁵ Bombeck, *I want to grow hair*, p. 135.

she should get to know me a little better. "I don't have time to waste," she says. "Where I sit, you get used to making fast decisions. And the right ones."¹⁶

The decision to include those self-revealing paragraphs would not be easy for many mainstream journalists, accustomed to "objective" writing. But without those reactions, the reader doesn't get the full picture of Angela and how leukemia has affected her. Later, she describes her first sexual experience which takes place in the women's restroom with a young man who would later lose his leg to bone cancer. She is speaking ten years after the event, and we see an older Angela, less rebellious and more sensitive to her father's feelings, and still tied strongly to her Italian-Catholic background. We also see some of the challenges in invading a patient's personal world:

She wants me to understand that this is a very private story and she'd rather not have it told.

"I'm telling you this because it's a beautiful story. And because you will know more about me from it. That's the only reason I'm telling you."

Just listen. Let her keep talking.

"If you can possibly change the story by not exactly stating things that happened and leaving it either to the imagination or handling it even more innocently in what had happened in a kiss ... or a touch ... Or ... we both went into the bathroom with the intention of fooling around, but I got scared and he let me out ..."

(Nervous laugh, voice rising.)

"Which is basically what happened!—but I mean before anything happened at all—I would really appreciate it. One, my family would not understand—I think you can understand that—I was eighteen—it's not water under the bridge. ...

"My father could never, never, never forgive this, all right? Because I'm Daddy's little girl. So please Ray, I'm ..."

(Nervous laugh again.)¹⁷

Although the reader doesn't know how Angela finished that last sentence, the words "... at your mercy" come quickly to mind.

¹⁶ Fox, *Angela Ambrosia*, p. 7

¹⁷ Fox, *Angela Ambrosia*, p. 53.

Fox believes his background as a theatre lyricist was the best possible kind of training he could have had as a writer:

I learned how to make a word or two carry the weight of many, how to make every syllable count.

Lyric writing also conditioned me to hear words sing, to expect them to sing. Sentences aren't composed only of words anymore, they are composed of syllables, and syllables have rhythm and meter and should scan. All is part of one big flow. I like to believe an entire book of mine could be scored.

He adds:

From regarding life as a lyricist I learned my most valuable lesson—what not to write. Far too many songs have been written. Such superfluity applies to other kinds of writing as well. If I can't say something new, or say it differently, I shouldn't be writing it.¹⁸

Two of the reviewers of this book agreed Fox should have written it. "Readers will not learn a great deal about leukemia, but they will find an engaging story," wrote C. L. Harris of the *Library Journal*.¹⁹ J. M. Waller of the *School Library Journal* agreed, calling *Angela Ambrosia* "an engaging story with an equally engaging heroine."²⁰

¹⁸ Locker, F. C. (ed.) Ray Errol Fox. In *Contemporary authors (new revision series): a bibliographical guide to current writers in fiction, general nonfiction, poetry, journalism, drama, motion pictures, television, and other fields*, v. 85-88, p. 183. Gale Research Inc.: Detroit.

¹⁹ Harris, C. L. 1979. *Angela Ambrosia*. *Library Journal*, July, p. 1447.

²⁰ Waller, J. M. 1979. Fox, Ray E. *Angela Ambrosia*. *School Library Journal*. Sept., p. 170.

Chapter Five

Literary Journalism and Other Medical Specialties

In 1963, Aldous Huxley wrote *Literature and Science*, in which he compared the divergent aims of literary and scientific writing and explored the ways science could enrich literature. Although he never specifically mentioned medical technology, his comments apply as well to the world of medicine. He also didn't mention journalists—but surely they can be included with Huxley's men of letters.

In general, Huxley bemoaned the lack of writers interested in how science works:

As a class, men of letters have reacted to science and technology in much the same way as the majority of their less-talented fellows. They have not been greatly interested in science as a set of logically coherent hypotheses validated operationally by experiment and dispassionate observation. And in the field of applied science their concern has been mainly with the social and psychological consequences of advancing technology, very little with its working or its underlying theories.¹

He also commented on the paradox that neither the poets nor the dramatists want to write about technology and ecology—this is, after all, the century of science, and isn't Nature still just as red (if not redder) of tooth and claw?² He attributed this dichotomy between science and literature partially to a “spiritual Iron Curtain”

¹ Huxley, Aldous. 1963. *Literature and science*. New York: Harper and Row, p. 44.

² Huxley, *Literature and science*, p. 61.

separating the public and objective world of science from the private and subjective world of literature.³ Richard Weeder, almost thirty years later, compared the public and private aspects of the two fields. In a 1988 interview, he said while writing and surgery are both skilled crafts, “surgery is a public activity, whereas writing is an absolutely private affair.”⁴

Huxley believed another difference between scientists and writers is the way they use language to go in opposite directions: scientists want to simplify and jargonize experience, while literary artists want to purify it by deepening, extending, and enriching it.⁵

Because of the “spiritual Iron Curtain,” Huxley also said it will be difficult to “incorporate the hypotheses of science into harmonious, moving and persuasive works of art” and called it a “challenge to intellectual combat, a spur to further achievement.”⁶ Yet, he was optimistic and, in 1963, said although the weapons to wage that war hadn’t yet been invented, they would be: “... sooner or later the necessary means will be discovered, the appropriate weapons will be forged, the long-awaited genius will turn up and, quite casually, as though it were the most natural thing in the world, point out the way.”⁷

It is now thirty years later, and few men—and even fewer women—of letters have answered Huxley’s challenge. In 1981, Samuel Florman questioned Huxley’s optimism. He said that aside from a few tantalizing glimpses of technology in literature (he included John McPhee, Aleksandr Solzhenitsyn, Robert Pirsig, Norman Mailer, and Tom Wolfe), “technology is absent from contemporary literature—except where it serves as a backdrop for scenes of gloom and alienation.”⁸ So much for Huxley’s “moving and persuasive works of art.”

Much has been written since about the gap between science and literature, and between scientists and journalists, and between science and the mass media. And even

³ Huxley, *Literature and science*, p. 39-41.

⁴ Orenstein, Beth W. 1988. The unmasking of a surgeon: doctor trades scalpel for pen. (Easton, Pa.) *Express*, Aug. 19, p. A10-11.

⁵ Huxley, *Literature and science*, p. 12-13.

⁶ Huxley, *Literature and science*, p. 107.

⁷ Huxley, *Literature and science*, p. 107.

⁸ Florman, Samuel. 1981. The Hardy Boys and the Microkids make a computer. *The New York Times Book Review*, Aug. 23, p. 1, 18-19.

more has been said and written about the appalling scientific ignorance of the American public.⁹ In his book, *Molecules of the Mind: the Brave New Science of Molecular Psychology*, Jon Franklin discussed how little we all know about the atomic age: "... even today most citizens of the United States and the Soviet Union, and of the more minor nuclear powers, are abjectly ignorant of even the fundamental concepts that underlie the age. We, the citizenry, got a late start—and we never caught up."¹⁰

The biggest problem with being technologically ignorant is most of us are out of the loop. Franklin concluded we are thus disenfranchised and powerless so that the uninformed consumer is forced to make important decisions by default instead of by informed choice. Although Franklin was referring to molecular psychology here, readers can extend the concept to understanding of other technological fields as well: "Molecular psychology is knowledge, and knowledge is power. With openness, intelligence, wisdom, sensitivity, and good will, we can apply that power in the cause of freeing ourselves."¹¹ Franklin was afraid the "difference between what they [the scientists] know and what we know will widen" and

scientists, each of whom is totally invested in his own project, are not likely to ask the hard social questions raised by their work — and that none of the rest of us is competent to. ... Blinded by our own prejudices and our own everyday priorities, we don't awaken to the new reality until events have overtaken us and it's impossible for us ever to become master of the situation.¹²

⁹ Friedman, Sharon M., Sharon Dunwoody, and Carol L. Rogers (eds.) 1986. *Scientists and journalists: Reporting science as news*. New York: American Association for the Advancement of Science; LaFollette, Marcel C. 1990. Scientists and the media: in search of a healthier symbiosis. *The Scientist*, July 9: 13,15; O'Keefe, Timothy. 1970. The mass media as sources of medical information for doctors. *Journalism Quarterly* 47 (Spring): 95-100; Phillips, David P., Elliott J. Kanter, Bridget Bednarczyk and Patricia L. Tastad. 1991; Importance of lay press in the transmission of medical knowledge to the scientific community. *New England Journal of Medicine*, Oct. 17: 1180; Caudill E. and P. Ashdown. 1989. The *New England Journal of Medicine* as a news source. *Journalism Quarterly*, 66 (Summer): 458-462; Moore, Mike. 1989. *Health risks and the press: Perspectives on media coverage of risk assessment and health*. Washington D.C.: The Media Institute; Nelkin, Dorothy. 1987. *Selling science: how the press covers science and technology*. New York: W.H. Freeman.

¹⁰ Franklin, Jon. 1987. *Molecules of the Mind: the Brave New Science of Molecular Psychology*. New York: Atheneum, p. 293.

¹¹ Franklin, *Molecules*, p. 298.

¹² Franklin, *Molecules*, p. 296-298.

Franklin, who saw himself as a “technological Paul Revere,”¹³ was not the first to worry about the informed having all the control. Huxley, in pointing out the danger in allowing the gap between technology and literature to continue, wrote that soon only the scientists will have knowledge, and: “Knowledge is power and, by a seeming paradox, it is through their knowledge of what happens in this unexperienced world of abstractions and inferences that scientists and technologists have acquired their enormous and growing power to control, direct and modify the world of manifold appearances in which human beings are privileged and condemned to live.”¹⁴

One weapon to regain some of that lost control is storytelling. The three writers included here can be added to Florman’s short list of technology in literature. *Shocktrauma* was published in 1980, and since then, two others, *In the Blink of an Eye* and *Life and Death on 10 West*, have appeared. And although Jon Franklin, Alan Doelp, and Eric Lax may not be the “long-awaited geniuses” Huxley was anticipating, they are all fine writers who use narrative techniques to teach readers about advances in the world of medical technology.

(i) Jon Franklin and Alan Doelp, *Shocktrauma* and Alan Doelp, *In the Blink of an Eye: Inside a Children’s Trauma Center*

Jon Franklin and Alan Doelp’s 1980 book *Shocktrauma* tells the story of the Maryland Institute for Emergency Medical Services, and it remains one of the earliest and best examples of literary journalism in medicine. In 1983 the two wrote *Not Quite a Miracle: Brain Surgeons and Their Patients on the Frontier of Medicine*, discussed in Chapter Three. And in 1989, Alan Doelp’s book, *In the Blink of an Eye: Inside a Children’s Trauma Center*, explores another branch of trauma medicine.

It is difficult to discuss Franklin and Doelp separately. In the acknowledgments of *In the Blink of an Eye*, Doelp humorously discusses the influence of Franklin:

¹³ Franklin, *Molecules*, p. 300.

¹⁴ Huxley, *Literature and science*, p. 9.

I doubt I will ever write a book without acknowledging the corrupting influence of Jon Franklin, and through him, the ghost of G. Vern Blasdel.¹⁵ Jon taught me that no matter how tough it is, the view is always worth the climb. He was right, of course. I shall never forgive him.¹⁶

And in *Writing for Story: Craft Secrets of Dramatic Nonfiction by a Two-time Pulitzer Prize Winner*, Franklin includes Doelp among those who have taught him: "I think of Alan Doelp, my writing buddy and co-conspirator, who kept telling me I was good when I was beginning to have serious doubts."¹⁷ And in the acknowledgments in *Molecules of the Mind*, a year later, Franklin says,

I owe a debt of gratitude to those friends who came through for me then, and without whose support I might well have lost my courage and my way. I thank, for instance, Alan Doelp, who over the years spent many hours patiently listening as I attempted to fit my research into a coherent pattern. He oohed and ahed when the pattern fit together, and pointed out when it did not.¹⁸

This relationship among writers, along with huge debts of gratitude to friends and family, is a common theme among literary journalists: in *Life and Death on 10 West*, Eric Lax even apologized to his wife for bringing a half-finished manuscript into the marriage—having already delayed the wedding several months so he could finish it. Undoubtedly this trend is a side effect of saturation reporting in medical nonfiction: Writers who spend months and years working one project need some sort of support

¹⁵ G. Vern Blasdel was the news editor of *All Hands* magazine, the Navy publication where Franklin worked for eight years. Franklin describes Blasdel as "an expert, acerbic and ancient (perhaps fifty) old man with a bad stomach and a mobile face capable of showing ten thousand different grades of disgust. He told people he had narcolepsy, but the truth was he was so bored with his job he had great difficulty staying awake. To keep his circulation going he made a hobby of targeting the worst, most illiterate writer on his staff—and proving that he, G. Vern Blasdel, could teach him how to write. So as soon as he saw my first piece of copy I became Vern's protégé." (Franklin, Jon. 1985. *Writing for story: craft secrets of dramatic nonfiction by a two-time Pulitzer Prize winner*. New York: Atheneum, p. ix.).

¹⁶ Doelp, Alan. 1989. *In the Blink of an Eye: Inside a Children's Trauma Center*. New York: Prentice Hall Press, p. xi.

¹⁷ Franklin, Jon. 1985. *Writing for story: craft secrets of dramatic nonfiction by a two-time Pulitzer Prize winner*. New York: Atheneum, p. x.

¹⁸ Franklin, *Molecules*, p. x-xi.

system, and writers who devote their time to an emotionally intense life-and death story need it even more so.

Franklin asserted the short story was the greatest training ground a writer could have. When the market for short stories died with the demise of magazines like *Colliers* and the *Saturday Evening Post*, the demand for nonfiction and journalism increased. Then in 1965 Truman Capote's *In Cold Blood* was published—a true story written as if it were a novel—and it was a pivotal point for Franklin. From then on, he began using more fiction techniques in his *Baltimore Sun* articles, and eventually won two Pulitzer prizes.

He wrote he is always watching for a *story*, which he defined as “a sequence of actions that occur when a sympathetic character encounters a complicating situation that he confronts and solves.”¹⁹

To be a *good* story, that complication or question should be fundamental to the human condition, in addition to being significant to the character. Love, hate, pain, and death are all fundamental complications—how significant they are depends on the individual characters and how much the reader is made to care about them.²⁰

To be an even better story, it should have more than one complication or more than one layer of complications. For example, these are some of the complications which carry the reader through *Shocktrauma*:

- Will half the accident victims continue to die unnecessarily because the nearest-hospital tradition means taking them to a facility unequipped to deal with their injuries?
- R Adams Cowley²¹ is convinced accident victims who don't receive lifesaving treatment within the first hour of their injury will die of shock within a week or two. Will the Maryland medical establishment accept Cowley's theory of the “golden hour”?
- Will Larry, an underage driver, survive the crash in which he flips a Ford compact over a steep embankment?

¹⁹ Franklin, *Story*, p. 48.

²⁰ Franklin, *Story*, p. 51-52.

²¹ Franklin and Doelp are careful to point out Cowley's name should be “R Adams Cowley” — the R should have no period after it, as it is not an abbreviation. (Franklin and Doelp, *Shocktrauma*, p. viii.)

- Will Linda, his sister and passenger, survive after being taken to a local community hospital instead of to Shocktrauma?
- How much longer can the motorcycle victim with the severed spinal cord remain alive?
- Will Freckles leave the grueling pace of Shocktrauma for an easier and better-paying job at the local community hospital? That complication becomes more significant with the realization that the community hospital bungled Linda's admission.

And, finally, to be a good story, the complication must be resolved because of the character's own actions—and generally the most successful stories have positive endings. Sometimes deciding if an ending is positive is not simple: Some resolutions may appear to be negative but are actually part of a larger complication, which is resolved positively. For example, if Larry survives, that's a positive resolution; if his sister dies, that's a negative resolution of her complication, but it's a positive resolution for the fate of the Shocktrauma facility, since more people will realize that the local hospital was not qualified to treat her.

These and other "complications" and the way they're resolved teach the reader about both Cowley and his hospital. Readers also gain an appreciation of the "golden hour" along with an understanding of emergency room procedures and equipment, as well as physiological details such as belly taps and liver function tests.

Good stories also depend on action, which is created by lively verbs. In the following paragraph, all the verbs and verb participles are highlighted in boldface type:

On the roof of the parking garage the medics **run** beneath the helicopter rotors, **pulling** the stretcher. The stretcher **glides** feet-first into the rear compartment of the ambulance and **locks** into place with a sharp snap. Inside, the nurse **kneels**, **releases** the safety straps across the patient's chest and **throws** aside the gray military blanket. The ambulance attendant **slides** in beside the nurse, the Bengali anesthesiologist **steps** into the rear and the doors **close**, **muffling** the noise of the jet engines. The ambulance **rocks** in the down draft as the helicopter **lifts** clear of the roof. Shovel-nosed scissors **cut** away the boy's clothing.²²

²² Franklin and Doelp, *Shocktrauma*, p. 17.

Nowhere are there any dull, weak verbs, such as “is,” “get,” “was,” or “has.” The passage is also written in the present tense, which adds immediacy. Franklin and Doelp’s writing style drags even an unwilling reader from his own world into theirs. Franklin, along with other short story writers, calls this “suspension of disbelief,” which, in nonfiction, he defines as the reader’s willingness to jump from his own real world to someone else’s reality. He elaborates:

Whether you’re writing fiction or nonfiction, good narrative will make the reader forget that he’s sitting in an easy chair. He will step into your character’s world to stand behind Tom Ducker as he battles Mrs. Kelly’s monster, or to labor with Wilk Peters in the turpentine forests of south Texas. If you tell your story correctly the reader’s identity will for a short time actually fuse with that of the character and he will live for while through that character. He will see with eyes, hear with his ears, and think with his brain. The ability to cajole the reader into that is the hallmark of good narrative.²³

By cajoling the reader into another world, the writer also has come closer to Aldous Huxley’s goal of a “moving, persuasive piece of art.” John Charnay of the *Los Angeles Times Book Review* certainly was persuaded of *Shocktrauma*’s merit. He called it a “painstakingly documented nonfiction” which “contained a powerful and realistic drama, as informative as it is intriguing. ... The dialogue is enthralling and the narrative compelling.”²⁴

[The selection for the anthology would include pp. 17-33 which describes Shocktrauma admissions procedures for Larry.]

Not surprisingly, many of the same concepts that were true in *Shocktrauma* also apply to Alan Doelp’s book, *In the Blink of an Eye: Inside a Children’s Trauma Center*. Eight years after the publication of *Shocktrauma*, Doelp chose to write about Children’s Hospital National Medical Center in Washington “simply because it is a

²³ Franklin, *Story*, p. 107.

²⁴ Charnay, John, 1980. Strong medicine and social stress. *Los Angeles Times Book Review*, June 1, p. 17.

wonderful place full of wonderful people who love kids.”²⁵ By itself, his choice of story might not have been a significant enough complication, according to Franklin’s standards discussed earlier. But when Doelp found out accidental injury kills 8,000 children every year in the United States (that’s one every hour), suddenly the complication took on additional impact.

Doelp’s format is similar to the one he and Franklin used in *Shocktrauma*.

Subplots include:

- Will 4-year-old David Myers survive being thrown 100 feet after the car hit him? If he survives, will he end up blind, mute, crippled and/or brain-damaged?
- What will happen to 7-year-old Michael Jackson (“not *that* Michael Jackson”²⁶), who fell from the porch awning onto concrete steps below, breaking one rib and driving the broken end through a lung?
- Will Dr. Marty Eichelberger succeed in convincing the medical establishment that although R Adams Cowley, “the patron saint of trauma medicine,”²⁷ was right about the golden hour, pediatric trauma requires very different assumptions, staff, and equipment?

Doelp’s book does differ from *Shocktrauma* in that it is a more overt crusade. He wanted to convince the public not only are many accidents preventable, but also how to be prepared if a child is involved in an accident. He includes three appendices of listing pediatric hospitals in every state, each state EMS director, in addition to all the graduates of pediatric EMS training programs.

In the preface Doelp states that he changed many details to disguise families who wanted anonymity, and says some cases are composites. “Nevertheless,” he says, “I offer the book as nonfiction, as the brief history of a new medical discipline, and as a practical guide to people in other cities who may conclude, after reading the tales that follow, that their own town, too, needs a Children’s Trauma Service.”²⁸ His final chapter, “Postscript: A Call to Arms” concludes with these words:

²⁵ Doelp, *In the blink of an eye*, p. xiii.

²⁶ Doelp, *In the blink of an eye*, p. 11.

²⁷ Doelp, *In the blink of an eye*, p. 15.

²⁸ Doelp, *In the blink of an eye*, p. xiv.

Eight thousand children die in accidents each year. Fifty thousand more are disabled. Many of those accidents could be prevented, and where prevention fails, many more lives could be saved with proper trauma care. We can, and must, do something.²⁹

Again, we see a literary journalist adding his own voice and opinion to his story.

[The anthology would include pp. 96-111 from In the Blink of an Eye, which describes the procedure for admitting trauma patients and is included in Appendix II.]

(ii) Eric Lax, Life and Death on 10 West

Much has changed in the world of leukemia treatment between 1968 when Angela Ambrosia was diagnosed with chronic myelogenous leukemia and 1983 when Linda Galbraith was told she had acute myelogenous leukemia.

In 1973, the first bone marrow transplant was performed at UCLA, and by 1978, ten percent of transplant patients were surviving. By the time Linda was diagnosed, the survival rate was 50 percent, and those patients who died did so not from the transplant process itself, but from graft-versus-host disease, a reaction of the body to the foreign marrow.

By 1984, another aspect of leukemia treatment which had changed was people's willingness to talk about it, to say the word *cancer*, and to be willing to read or talk about it at all. In fact, if Angela had been diagnosed twenty years later, her family might have allowed her to know what she had.

Part of this demystification was due to publicity and to the larger number of cancer survivors, but part was also due to AIDS. In *Monopolies of Lies*, Adam Mars-Jones, an AIDS patient, revels in being able to tell people that he "only" has cancer:

I can't work. That should be pretty clear. But I've been lucky. I'm on extended sick leave for a while yet, and everybody's been very good. I said I had cancer,

²⁹ Doelp, *In the blink of an eye*, p. 179.

which I do and I don't, I mean I do but that isn't the problem, and while I was saying cancer I thought, all the time my Gran was ill we never once said cancer, but now cancer is a soft word I am hiding behind and I feel almost guilty to be sparing myself. Suddenly cancer had the sound of "interesting condition" or "unmentionables." I was curling up in the word's soft shade, soothed gratefully by cancer's lullaby. Cancer. What a relief. Cancer. Oh that's all right. Cancer. That I can live with.³⁰

Writers of medical nonfiction often become deeply involved in their stories, particularly those who write about terminally ill patients. Lax is no exception. He is a freelance writer living in Los Angeles and is most known for his two books on Woody Allen. In 1982, he was told by his editor at *New West* (later *California* magazine) to "do something about modern medicine."³¹ Lax says a writer with no medical training needs all the help he can get just getting in the front door. Fortunately, he had gone to college with Dr. Robert Gale, who had since become the director of UCLA's bone marrow transplant unit on the tenth floor of the west wing. The two agreed Lax could follow one patient through the weeks of treatment and it would be his responsibility to report both the human story and the medical issues.

Lax uses Linda Galbraith to teach the process and concepts of bone marrow transplantation. She is 26 years old, six months pregnant, accustomed to riding her horse in 100-mile endurance rides, and is eager to tell her story in the hope it will help other people make the kinds of difficult decisions she had to make. She is described by the admitting nurse as "articulate, introspective, good-humored, positive, ... with a good chance of doing well."³² Lax spent two hours every day with her for two months and becomes a part of the drama as the oncology team has to choose between allowing Linda's leukemia to progress to even more dangerous levels, or delivering her baby too soon.

Lax explains how his involvement in *10 West* increased from the original agreement with Gale:

³⁰ Mars-Jones, Adam. 1993. *Monopolies of loss*. New York: Alfred A. Knopf. In Wolitzer, Meg, 1993. Meditations on the epidemic. *New York Times Book Review*, June 13, p. 18.

³¹ Lax, *Life and death on 10 West*, p. 266.

³² Lax, *Life and death on 10 West*, p. 4.

I went there to be merely an observer, but that is impossible in such an environment. I went intending to stay a month but stayed seven. I spent ten or twelve and sometimes more hours a day, six or seven days a week on 10 West, watching, listening, and talking with doctors, and nurses, patients, their families, and researchers. At the outset, the doctors and nurses warned me that anyone who comes to the ward must maintain a safe emotional distance from patients lest he be overwhelmed by the intensity of their struggle. Each of them, though, had stories of the times when that distance could not be kept, and of the pain they felt when a patient they grew close to died. I felt that pain, too. No one goes to 10 West and leaves it unaffected.³³

Like Franklin and Doelp's treatment of Richard, the former addict in *Not Quite a Miracle*, Lax also has to do some reconstructive reporting. And like Kramer in *Invasive Procedures*, he too becomes part of the story, but even more so:

This book, however, begins four months before Linda or I came to 10 West. All quotes and details of that time are from the recollections of Linda, her family, and the hospital staff. Medical facts are from her hospital record. By circumstantial and emotional necessity, I became part of her story after she came to the ward, and thus, beginning in Part Three, I am a participant as well as the narrator.³⁴

Although some reviewers were unhappy with the reconstructive reporting Franklin and Doelp did in *Not Quite a Miracle*, most reviews of *Life and Death on 10 West* were positive. Faye Powell says in the *School Library Journal* that Lax portrays the patients' lives with "empathy and realism."³⁵

Andrea Barnet wrote a glowing review for *The New York Times Book Review*, in which she called Lax's book "riveting, fastidiously reported" and "penetrating medical journalism." She added, "His humane book is a testament to the delicate balance he manages to strike between personal participation in the lives of the

³³ Lax, Eric. 1984. *Life and death on 10 West*. Times Books, p. 1-2.

³⁴ Lax, *Life and death on 10 West*, p. 4.

³⁵ Powell, Faye. 1985. Lax, Eric, *Life and death on 10 West*. *School Library Journal*, April, p. 106.

people he observed and journalistic remove. Every page is graced with extraordinary commitment, thoughtfulness and feeling.”³⁶

Patricia Blake of *Time* magazine wrote that Lax’s book “is a model of medical writing for the layman” and that it serves “to dispel the paralyzing terror that the very word cancer engenders.”³⁷

The reviewers were also impressed with how much information Lax provides—for better or worse. Powell warned that the book is not “for the squeamish because of the descriptions not only of procedures used in this basically new field but also of the patients as they progress or regress.”³⁸ Barnet admired the way Lax “makes an enormous amount of technical information accessible to the reader and integrates it with the drama of Mrs. Galbraith’s struggle.”³⁹ And Dr. Lawrence K. Altman wrote in a review for *The New York Times* that “*Life and Death on 10 West* is a compelling drama of clinical research. It is a welcome addition to the books written over recent years demystifying medicine and helping to acquaint people with the realities of catastrophic illness.”⁴⁰

[The selection for the anthology would include pp. 34-53, in which Lax describes Linda’s mental preparation for the transplant.]

³⁶ Barnet, Andrea. 1984. A dispatch from the war on cancer. *The New York Times Book Review*, March 25, p. 12.

³⁷ Blake, Patricia. 1984. Survivors. *Time*, May 14, p. BT11, 13.

³⁸ Powell, Lax, Eric, Life and death on 10 West, p. 106.

³⁹ Barnet, A dispatch, p. 12

⁴⁰ Altman, Lawrence K. 1984. Life and death on 10 West. *The New York Times*, March 22, p. C21.

Chapter Six

Conclusions

Having examined books of literary journalism in medicine from the last fifteen years, what conclusions can we draw about this genre? Was Tom Wolfe right when he said science was the only consequential subject that hadn't been touched by literary journalism?

Chapter One surveys the confusion which reigns in this genre and concludes:

- Of all the names given to this genre, Hutchins Hapgood's use of the term "literary journalism" in the early 1900s is most appropriate. Unlike some of the other terms ("literary nonfiction," "new journalism," "nonfiction novel," etc.), literary journalism includes the idea of journalistic techniques and timeliness along with the goal of fine writing.
- Another goal of literary journalism is to go beyond just keeping a simple record in order to seek a larger truth, and to try to make sense of our culture.
- The key element in this genre is the narrative. The simplest definition of literary journalism is: nonfiction writing using fiction-writing techniques.
- Additional techniques which help drive the narrative forward are scene-by-scene construction, dialogue, incorporating the author's point of view, immersion (or saturation) reporting, flexibility of structure, characterization, and status details.
- Literary journalists are adamant that in spite its fictional trapping, their work is as accurate as conventional journalism.
- In medical writing, a sense of personal mission, or advocacy, on the part of the author is often a reason for writing the book.
- Other reasons for the rise of literary journalism, include the alleged demise of the novel in the 1960s, the death of the short story market after World War II, the

political climate, more open and egotistical attitudes of society, and changing language of the Sixties.

- Much of the power of literary journalism lies in the fact it is true.
- Although literary journalism has been accepted by now as a genre in its own right, it still has its share of critics. Some believed it would detract from mainstream journalism, while others objected to infusion of a writer's personal voice. Some still feel fiction techniques have no place in journalism.

Chapter Two develops a rough taxonomy of literary journalism in general and concludes few writers have been willing to take on the scientific or the medical world using the techniques of literary journalism. Possible reasons include:

- Writers find it difficult and often legally complicated to invade the private world of medicine.
- In the past, few writers have wanted to try to bridge the gap between science and journalism. Fortunately, this attitude has changed with the increase in science writing courses and programs like the American Chemical Society's Science Reporters' Workshop.
- To be done right, literary journalism demands a huge investment of time, and, to be done right, literary journalism in medicine demands a writer's emotions and vulnerability.

In a time of skyrocketing medical costs and rapidly developing technology, health communication is in greater need of coherent and readable writing than any other field. Fortunately, writers are responding to that need: Considering the supposed lack of medical writing in literary journalism, a surprisingly large number of books in this genre exist. Even after eliminating how-to books, personal narratives, collections of essays, and books written by medical insiders, at least another ten to twelve books of literary journalism remain.

Surgery has been explored more thoroughly than other areas of medicine by literary journalists, and Chapter Three asks why: are writers attracted to the pioneering spirit of the surgeons, are they awed by surgeons who dare to come so close to the human soul, or are they curious about the power to revive a dying person? Four books were examined. In three, *Not Quite A Miracle: Brain Surgeons and their Patients on the Frontier of Medicine*; *Surgeon: the View From Behind the Mask*; and *The Healing Blade: A Tale of Neurosurgery*, narrative is the key element. The authors

all tell *stories*: about patients, about surgeons, and even about developing medical facilities. We learn enough about the characters in the stories to care about them, and we begin to transfer their experiences into our own world.

One book, Kramer's *Invasive Procedures*, is less dependent on narrative, but still counts as literary journalism because the author has immersed himself in the subject, injects his own voice and experience into the story, and uses dialog and characterization to attract the reader.

Disease is a less popular topic for literary journalists, as is discussed in Chapter Four. The element of heroism that's present in surgery is often absent here, and many terminal diseases are unappealing, hideous, and downright scary. It is also extremely difficult to write well—to write tastefully, compassionately, —informatively—about dying patients, and it appears to be a challenge few writers are willing to tackle. One way to avoid that intensity is to write a historical piece encompassing enough time, characters, and scope to provide emotional distance, which is the approach taken by Gordon Thomas and Max Morgan-Witts in *Anatomy of an Epidemic*. Ray Errol Fox took the opposite approach and wrote about Angela Ambrosia's leukemia head-on, in spite of his fear of getting involved.

In Chapter Five, the dichotomy between science and literature is explored more thoroughly. As modern technology grows and becomes more complex, the public's understanding shrinks, and the knowledge/information gap widens. The result is many people who are losing the power to make informed decisions about their own medical destinies. One way to narrow that gap is to educate the public—to educate them entertainingly by telling stories. Jon Franklin and Alan Doelp are masters at this, and their books, *Shocktrauma* and *In the Blink of an Eye* tell stories to describe adult and pediatric trauma, a new medical discipline. In *Life and Death on 10 West*, Eric Lax uses the story of Linda Galbraith to illustrate the procedures involved in bone marrow transplants.

What does all this say about the role of literary journalism in medical nonfiction? Like conventional journalism, its primary goal is to inform, and maybe even teach, the reader. Literary journalists use entertainment, through storytelling, as their tool. One result of their writing technique is to demystify medicine: with cancer, for example, one reviewer said Lax's book serves "to dispel the paralyzing terror that the very word cancer engenders," and points out that people have to shed fear before

they can take care of themselves and go for routine cancer checkups.¹ Readers have to lose their fears before they can learn, but according to Aldous Huxley and Jon Franklin and others, once people learn about the technological world, they will have more power to make more informed choices in their own lives. Knowledge is power, according to these writers.

All of this emphasis on knowledge could be disheartening for aspiring writers, particularly those without a solid science background. How much science does a writer need to master to be able to write books like *Life and Death on 10 West*? Writers are specialists in writing, not in genetics or biomedical engineering. Thirty years ago, Huxley responded to that question, and his answer still applies: he says it is impossible for any non specialist to have a thorough and detailed knowledge of any branch of science:

It is also unnecessary. All that is necessary, so far as the man of letters is concerned, is a general knowledge of science, a bird's eye knowledge of what has been achieved in the various fields of scientific inquiry, together with an understanding of the philosophy of science and an appreciation of the ways in which scientific information and scientific modes of thought are relevant to individual experience and the problems of social relationships, to religion and politics, to ethics and a tenable philosophy of life.²

He added this advice:

To the twentieth-century man of letters science offers a treasure of newly discovered facts and tentative hypotheses. If he accepts this gift and if, above all, he is sufficiently talented and resourceful to be able to transform the new raw materials into works of literary art, the twentieth-century man of letters will be able to treat the age-old and perennially relevant theme of human destiny with a depth of understanding, a width of reference, of which, before the rise of science, his predecessors (through no fault of their own, no defect of genius) were incapable.³

¹ Blake, Patricia. 1984. Survivors. *Time*, May 14, p. BT 11, 13.

² Huxley, pp. 71-72.

³ Huxley, p. 87

The next step

Probably no project of this type is ever finished, and this one is still a work in progress. The framework is established, but there are still other books to be read and analyzed, and other authors to explore. Other potential examples identified too recently to include in this study include *First, Do No Harm* by Lisa Belkin; *Five Patients: The Hospital Explained* by Michael Crichton; and *Anatomy of an Illness* by Norman Cousins. Some or all of these books might well qualify for inclusion in an anthology of literary journalism in medicine.

Another approach would be to interview the authors themselves and include their comments on why they made the choices they did.

Another valuable addition would be to include comments by members of the medical establishment about these books. Randall Pedigo, M.D., Knox County, Tennessee, coroner, liked *Shocktrauma* and said it was an accurate picture.⁴ How do other medical practitioners feel about the way these writers have portrayed their worlds? What does the medical press have to say about these books?

In conclusion, literary journalism in medical nonfiction is indeed alive—perhaps even thriving—and provides a solid bridge between the two cultures of science and literature. Aldous Huxley might even consider literary journalism the missing weapon in the battle to raise the spiritual Iron Curtain between the two disciplines. In any case, his parting thought in *Literature and Science* still applies:

Thought is crude, matter unimaginably subtle. Words are few and can only be arranged in certain conventionally fixed ways; the counterpoint of unique events is infinitely wide and their succession indefinitely long. That the purified language of science, or even the richer purified language of literature should ever be adequate to the givenness of the world and of our experience, is in the very nature of things, impossible. Cheerfully accepting the fact, let us advance together, men of letters and men of science, further and further into the ever-expanding regions of the unknown.⁵

⁴ Pedigo, Randall, pers. comm. Jan. 29, 1993.

⁵ Huxley, p. 118.

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Appendix I

then digs out to cross the busy four lanes of Fifty-first Avenue.

This is one of those moments his parents will replay in their minds, rewind, and replay, compulsively and against their will, as though in one terrific replay the scene they see coming will vanish like a bad dream. Tim Mathias, Sr., will wonder why Timmy did not ride *down* Fifty-first Avenue to the traffic light; his mother, Kerry, will ask herself why he didn't take the school bus, just today.

At 7:35 A.M., give or take a minute, a red pickup truck heading south on Fifty-first Avenue pulls from the left lane to the right lane. The driver suddenly sees a boy on a bike, who appears to be turning circles in the street. More likely the boy has seen the truck bearing down on him and, startled, is trying to turn back. He almost makes it, he is turned around; in one of those magical replays, he would make it by a hair. But this is not a magic world. At 45 mph the truck blows the bike into a ball of twisted pipe. TJ is slammed straight on by the right fender, crashes over it, and, apparently in one last effort to ward off the truck, leaves two sets of finger streaks in the dust of the fender, front to back.

All quiet. TJ lies in a bloody heap at the curb, his right leg broken so it juts at a 45-degree angle from his body. Worse, the most severe injuries are invisible ones, previously seen only in autopsies. At the top of his spine, where tough ligaments bind the first neck vertebra to the skull, there is now a clean separation. Nothing protects his delicate spinal cord. Within his skull, a hemorrhage has begun squeezing the life from his brain stem; it would not take long.

So ends the only waking hour of April 26 for TJ Mathias. As the world within him shut down so that a month would seem a day, the world around TJ began moving at alarm-bell speed.

Kerry Mathias had crawled into bed just after 6 A.M., after bicycling home nearly eight miles from her night-waitress job at Dunkin' Donuts. At about the time she headed for bed, her husband was getting up. Tim was off to his trainee job with a pest-control company; that job kept him on the road nearly twelve hours a day, killing hours in the early summery heat that had descended on the Valley of the Sun in late March this year, two months ahead of schedule. They had moved here in this kind of heat, the July

3

TJ

Wednesday, April 26

Seven-thirty on a lovely desert spring morning and Timmy Mathias whips his motocross bike down lanes of scrub mesquite and fields awaiting cotton on his way to school, his mind racing along with a ten-year-old's thoughts. Little League is under way and he made the majors; baseball is his favorite sport and sports his favorite thing, which is partly why he likes Arizona better than New Jersey: You can play outside all year. But he had a problem on the school bus a few days ago, and to keep clear of any more hassle he is biking the four miles to Horizon School, in the Phoenix suburb of Glendale, a sunbelt collage of L.A.-style traffic, cotton fields, developments, and desert. His father agreed to let him bike to school after he promised he would stay off major thoroughfares.

TJ is a "hard charger," in the language of the auto racing he loves. He does not hang back and await opportunity. He goes for it. He is double-daring, one of those lovable risk-takers, children whose racing cars mix with stuffed toys, whose motocross bikes glide down urban streets next to semis and earth-moving trucks. He's a handful. But he is keeping his promise to his father today, riding along quiet Barbara Drive. He halts briefly at the stop sign,

before: Kerry and the two Timmys, tiny Rachel, now just three, and Bob Jackson, their friend from back home at the Jersey shore who had joined the family caravan to see if his own luck might turn in new country.

They'd all piled into the rental truck loaded with their furniture, and they'd headed West, just like people had been doing for a hundred years for the same reasons. Tim had been working as a cigarette vending-machine deliverer and mechanic, Kerry as a waitress at Dunkin' Donuts. Bob couldn't work because of an accident injury but at least had some Social Security income. They pooled their money for rent, and Bob was available to stay with the kids while Tim and Kerry worked.

This was hardly something better; they were barely hanging on. First, their car had been repossessed, leaving Tim no way to get to work. But Tim's father had just visited and bought them a replacement; it was old and no beauty, but it was transportation and they were grateful for that. They would hang on and things would get better. Kerry was a firm believer that you took life one day at a time, step by step.

This morning, since she was on the night shift, Bob Jackson would see TJ off; by leaving home just before 7:30 he could get breakfast at school. The phone rang around eight, and she was initially confused with sleep. Someone from Horizon School was asking if Timmy was home sick; he had been sent home with a slight fever the day before. She was pretty sure not but checked with Bob. No, Bob said he'd gone to school. What was he wearing? There had been a bad accident; they were checking absences at area schools, and Timmy was not there yet. She looked out back: His bike was gone. Originally blue, it was a birthday present in 1985 for her Thanksgiving boy—born Thanksgiving Day, 1978. She and TJ had painted the bike black just before they left New Jersey. She asked Bob what Timmy had been wearing and dutifully reported everything. And then her mind went blank. For the next forty-five minutes, if she had any thoughts, she would never remember them.

As soon as the police car pulled up, she knew. "I just grabbed Rachel and ran into the police car. I should've left her with Bobby, but who was thinking straight?" And who could have thought that the harsh weeks before would soon be the good old days. Or that

she, who prided herself on being tough and no weeper, would spend a lot of the next twenty-four hours crying. She had no idea where the police car was taking her, other than to her son.

Tom Shannon and Earl Johnson would have passed each other on Fifty-first Avenue but for the traffic snarl, typical of the pre-8 A.M. rush hour. On his day off, Shannon was taking his little girls—five and one—to the medical clinic for shots, and you had to get there half an hour early or wait half the day to get in. He was southbound on Fifty-first Avenue, in the left lane; traffic ahead was stopped, but the right lane was clear, so he pulled out into the right lane, but he never did get up to speed.

Ahead was a scene he recognized too well. A crumpled bicycle, barely recognizable as such, and perhaps twelve feet beyond, a small bloody figure crumpled up against the curb. A policeman bent over the figure; a few bystanders looked on. He pulled his car diagonally to block the right lane, told his daughters to sit tight, and took off running. As he did so, he saw Earl Johnson at the same dead run, coming from across Fifty-first Avenue.

In the usual, unfortunate way of circumstance, these two who would first touch such a victim would be compassionate but ignorant strangers. Seeing the pitiable figure, the broken right thigh, the bleeding cuts up and down, one of them would scoop him into his arms to get him off the street. And would kill him in that instant. This time, both men were paramedics who lived just a few blocks from this spot. It was TJ's first lucky break.

Johnson, heading north on Fifty-first Avenue on his way to work at his Glendale fire station, got to Timmy first: "In almost any traffic accident you have to expect a neck injury, but when a bicycle is involved, it's just instinctive: You have to protect the cervical spine. First, of course, is the airway. The airway has to be open."

The cervical spine—comprising the vertebrae of the neck—begins with C1, the circular bone fused to the skull base, through the center of which the soft neural tissue of the spinal cord flows. Parallel to the spine and just in front of it runs the air pipe. When the neck is broken, the airway frequently is shut off as well. Without air, brain death occurs within minutes.

At seven thirty-seven Glendale police officer Mike Michelson had called in the accident. This was barely two minutes later.

Tom Shannon told Johnson the boy's airway was only partially open, his pulse strong but rapid. But almost immediately the boy went into a kind of rhythmic, corkscrewing contortion of his hands and arms known as decerebrate posturing. It is a major sign of severe brain injury. There was nothing they could do about that; they had to move the boy, to clear his airway. While Johnson held the boy's head and neck, slowly and carefully he and Shannon unfolded his upper body, which had been twisted to the left, so he lay flat on his back. "Call it a premonition," Johnson recalls, "but as I held his head and neck, it just didn't feel right. Usually you'd feel a strong connection, rigid muscle with a certain tone. But there was nothing."

And there was nothing more they could do. "When it's just you there, you have only your head and your hands. Your head's racing a million miles an hour, but there's nothing your hands can do."

Until you hear a blessedly familiar, shrill keening. Johnson looked up to see the yellow fire truck with its candy-apple flashing lights rushing down Fifty-first Avenue toward them. Paramedic Engine Company 54, his own unit, with Captain Steve Smith in command, had arrived with all its medical gear. It was seven forty-two, five minutes after dispatch.

Captain Smith had the Southwest ambulance crew on the scene as well as his own crew. They, Johnson, and Shannon were getting IVs working, getting the boy stripped and into a Mast Suit, a jumpsuit that can be inflated to stabilize blood pressure in shock victims, getting him into a neck collar.

Paramedic's report, always staccato:

Name: unknown. Age: ten?

Pupils: Equal and reactive [to light. A good sign.].

0743: Oxygen mask.

Smith is worried about sending the boy off in the ambulance in rush hour traffic, although the crew is doing a commendable job now. He calls for the air-evac chopper.

0745: Mast Suit.

0749, 0753: Blood lines in. "He had a 'hot belly'—rigid, an indicator of internal bleeding."

0755: Shannon guides in Tim Schneider's air-evac helicopter while Johnson remains with the boy.

0757: Air evac leaves. Over the sixteen-mile flight to the St. Joseph's helipad in downtown Phoenix, flight nurse Art Russ and paramedic Neil Ashton monitor TJ's fluctuating condition.

0758: Patch. Smith was on the air to St. Joe's.

0801: "Johnny Doe" is picked up on the Emergency Room records of St. Joseph's Hospital and Medical Center and its associated Barrow Neurological Institute.

Chief resident Tom Graham's Wednesday schedule was about to be canceled as he snuggled down off the men's dressing room, trying to catch forty winks. The beeper on his pager blew. By the time he reached the trauma room, junior resident Brian Fitzpatrick had begun checking the boy's cervical spine for injury. Graham decided to stay until the first scans came in, because it would not be certain that there was neurological damage until confirmed by x-ray.

Dr. William Schiller and his trauma team were examining the boy, monitoring vital signs, and preparing for the x-rays, beginning with the cervical spine. His injuries appeared devastating. Bloodied from head to toe, he had several abdominal lacerations that could have been deep enough to penetrate the intestinal wall. He had a compound fracture of the right leg. But neurologically he initially appeared uninjured. Both pupils reacted to light, both sides of his body moved in response to pain, and he was moaning. The decerebrate posturing noted in the accident report had ceased.

Suddenly the boy lashed out with his arms and cried. Now he began thrashing. Alarmed, the trauma team rushed to hold him still. He was sure to kill or paralyze himself if he had neck injuries. Schiller and Graham decided to paralyze him with drugs; that would keep him still for now, and it appeared certain Schiller would have to undertake exploratory general surgery to confirm the extent of internal injuries, and general anesthesia would keep him still from that point onward.

Nurses Leslie Mast, Lynne Maiwurm, and Sue McCoy divided up the vital duties while x-rays were shot: Hook up the respirator;

he wouldn't be able to breathe while paralyzed; keep eyes on the monitors, especially noting changes in heartbeat or blood pressure that might signal crisis; keep the IV lines going; insert catheter. Then something frightening. The boy went into total paralysis, on his own. That implied damage to the brain stem. No part of the brain is as vital to the continuance of life as the stem of the brain. No brain injury could kill as quickly or, if not killing, leave the victim completely devastated. Then he came out of it, seeming to waver between neurological normalcy and paralysis on his right side.

X-rays hinted at damage to internal organs and showed internal bleeding. And there was a line of separation of the first vertebra from the skull. But x-rays would never show what was happening to the brain or portray details of the internal organs. They showed bone most clearly, missed nearly all the soft, shadowless tissues that constituted most of the brain. X-rays sometimes even miss neck fractures when they involve cartilage and ligaments rather than more-solid bone.

With respirator and lines in tow, Maiworm took charge of the gurney and led the way to the CT scanner. This giant, enameled-steel doughnut is an x-ray machine that shoots in a complete circle, with the patient lying in the hole of the doughnut. A computer compares subtle differences in the x-ray patterns and composes detailed images of the inner body. Within the glass-enclosed control room, the medical team watched as pictures of the computer-assembled body were displayed on the monitor, in slices, head to toe.

The CT scans told Schiller all he needed to begin exploratory abdominal surgery just after 9 A.M. on Timothy I. Mathias, Jr. Now Johnny Doe had a name, and a terrified mother in the waiting room. Timmy had a ruptured spleen and damage to his liver and one kidney. Only a few years ago, these injuries would probably have proven fatal. Now, with tremendous strides in caring for trauma victims from accident site to surgery, Schiller could be hopeful, although he emphasized that the injuries were serious. He told Kerry he would have to remove Timmy's spleen but believed the bleeding could be stopped and his other organs saved. In fact, Schiller would save half his spleen, though soon that would seem a hollow victory.

Kerry never even saw him. A doctor explained that they needed to begin exploratory surgery on TJ, and why. It was serious. She held Rachel in her arms; she couldn't let Rachel see him like this, so she couldn't go and see him herself. Now she agonized over that decision, but she couldn't let herself think why not seeing him then might turn out to be so important.

Tim was out in his truck, a few miles from the yard. He had just finished pesticide spraying on one job and would head to his next in a few minutes; then a call came to return to the office. The dispatcher's voice sounded ominous, and he wondered if he were about to be laid off. At the office his boss, Robert Ramsey, told him, "Your little boy has been in an accident. He's at St. Joseph's."

"I didn't even know where St. Joseph's was. I was kind of in a daze." Ramsey drove him downtown. It took a while to find Kerry, weary already, clutching Rachel. The little girl was at the age when her voice was fully articulate but still had the quality of a baby voice, so every word seemed precocious. "The doctors are fixing TJ," she said. In the long morning's wait, it dawned on Tim that with this crisis at hand—and how bad it was he had no idea—the family had no car to get to and from the hospital. He had not completed emissions testing and paperwork needed to register their car. But everything seemed under control here. He told Kerry he would take care of that problem, then come back.

He had just gotten home, the car still unregistered, when Kerry called. Now she was tearful, and that was not like her at all. "You have to get back here quick," she said. "They're saying he might die."

Still she couldn't let herself think ahead to why not seeing him before surgery might turn out to be important. That she might never see him alive again was not thinkable. She didn't want to explain over the phone all that the pediatric neurosurgeon had told her, or how very strong the "might die" had been. Tim drove back to St. Joe's, sure at every turn he would be stopped for driving the car unregistered. When he got there, he and Kerry were told they should not leave the hospital. Timmy's brain was bleeding, and the doctors weren't sure what, if anything, they could do.

Graham ran a set of CT scans up to Spetzler as Jack Schulte's standstill began. Fitzpatrick, left to accompany Timmy into general surgery, ruminated over the remaining set of images. The scans offered little but maddening hints. Was that a shadow along the brain stem? Seemed to be. Was the shadow a hemorrhage? The brain stem did appear to be shoved back. If a hemorrhage, was it still bleeding? Just as Schiller had needed the CT scan for a detailed picture of the intestinal cavity, the neurosurgeons needed a Magnetic Resonance Imaging scan. CTs had revolutionized neurology on their introduction in the mid-seventies, for they offered finer pictures of bone, tumors, and the more solid structures of the brain than had ever been available. But they were still images built up from x-rays, super-high-energy beams that pass so easily through most tissue that the delicate structures of the brain often remain transparent to them. MRI scans, to oversimplify, register tissues according to the amount of water they contain, so even the gossamer cortex of the brain shows clearly. An MRI would give a finely discriminated picture of Timmy's brain stem, with nearly the clarity of detail seen in surgery.

But here they were stymied, and there seemed no way out. As the name implies, Magnetic Resonance Imaging uses a magnet to build its images, and the magnet is so powerful it destroys digital watches and erases credit cards. It would knock out Timmy's respirator, and that would kill him.

Without better pictures, they would have no way of knowing if something inside his head were killing him; therefore they could do nothing. There is no such thing as exploratory brain surgery. Neurosurgeons must know where they are going within an eyelash, for that is the order of magnitude of some of the brain's smallest blood vessels and nerve fibers, and they must watch through the intraoperative microscope as they go—a tool developed not quite a generation ago by Malis and Yasargil, before which this kind of surgery was virtually unthinkable.

Fitzpatrick and Stephen Papadopoulos, a neurosurgeon on a felloship to refine his expertise in the spine, spent the morning

and early afternoon hustling "films" up and down: to Operating Room 1, where Spetzler was in the middle of a hypothermic arrest procedure, down to the neurosurgery offices, where pediatric neurosurgeon Harold Rekate was examining young patients. Then down the hall to Volker Sonntag, Papadopoulos's mentor and Barrow's expert on the spine. X-rays, then CT scans. Then came the big break.

Barrow had just begun field testing an experimental MRI scanner, not yet in service. Its low-strength magnetic field would not interfere with respirators, but the manufacturer claimed it would produce the same fine-resolution scans as other models; it just took more time to compose its images. It had arrived only weeks earlier.

By mid-afternoon, there was a sizable set of MRI images of Timmy Mathias's brain and spinal cord, and a critical mass of brainpower focused on them, huddled around the lighted wall panels in Barrow's patient examining area. Spetzler, Sonntag, Rekate, Fitzpatrick, Papadopoulos, an ever-shifting group of neurosurgeons looking for answers, now that the problems were coming clear. Not that clarity in this case brought joy.

"There initially didn't seem like anything we could do," Rekate said. Neurosurgeons are not easily shocked, but that is how he describes himself as he stared at the walnut-sized blood clot pressing against the front of TJ's brain stem, finally disclosed by the new MRI. Cerebral fluid was now building up throughout the brain, and they would need to drain it to prevent massive damage—but the damage had probably already occurred.

The major shock was that the skull had been broken loose from the neck. It took a while for that to sink in. And this was no hairline fracture; the separation of the first cervical vertebra from the skull was more complete than any of them had ever seen.

Nothing held the boy's head on but his spinal chord, a few muscles, and skin. The spinal chord, to a neuro-physician, is simply brain, spidery filaments of brain running up and down the spine and to the limbs and internal organs, carrying messages in through the brain stem, commands out, gray matter and white matter just like the major volume of the brain itself. Only muscles and skin prevented TJ's spinal cord from being pulled to tatters.

How would they drain the hemorrhage? How would they reat-

tach the skull? The usual approach for such a bleed would be through the mouth, because the brain stem lies directly behind it. But when the neurosurgeon passes through the back of the mouth, he arrives at the same tough meninges that cover and protect the brain everywhere. The hemorrhage indicated that the meninges may have ruptured; now if they cut through the mouth to drain the clot, they would infect the brain with all the microbes in the boy's mouth. The mouth and intestines can handle the rough traffic of life; the brain cannot. The clot would kill him in hours; infection would kill him in days.

The inaccessibility of the front of the brain stem was what led Spetzler to use the standstill procedure in operating on Jack Schulte. It was no small irony that here, coming through the Emergency Room, was an equally serious injury in the same dangerous region.

The articulated traits of personality and intelligence arise in the thick forests of connections in the cerebral cortex, and many of the finely coordinated, dazzling muscular controls of great athletes, musicians, or neurosurgeons emerge in the cerebellum at the rear and beneath the cerebrum; the brain stem is life itself—breathing, heartbeat, and that most essential aspect of meaningful life, consciousness. Not pain and joy and love, but awareness arises in the brain stem.

Only a few months earlier, Spetzler had operated on a woman with a brain-stem tumor, a hellishly difficult procedure because of the need to remove tumorous tissue without damaging the healthy tissue. All had gone precisely as planned. *You couldn't have asked for a better outcome, surgically speaking.* A terrible irony. After initially appearing to recover, the woman lapsed into a coma. And she emerged from the coma into the awful state called "locked in." She was *there*, awake and alert, but utterly paralyzed and without sensation, able to signal only with her eyelids. It still was unclear what had gone wrong, but Spetzler was sure that a tiny perforator artery to the brain stem had ruptured or been damaged, possibly by vasospasm. The spasming of blood vessels was one of the major deadly complications of any brain surgery.

Spetzler broke the intense silence of the huddle. He suggested an approach he had developed to reach aneurysms at the front of the brain stem. Several of Spetzler's contributions to neuro-

surgery had come through novel approaches to impossible-to-reach areas, and he had used this unusual approach successfully. He would come in from the rear of the neck and work his way carefully around to the front of the brain stem.

Now Sonntag jumped in. He had invented a V-shaped bolt for patients with a type of arthritis that caused degeneration of the first vertebra. The bolt was used to strengthen the connection between the skull and C1. It had never been used as the sole link between skull and spine; perhaps it was worth a try.

But wasn't this all wishful thinking? Timmy now looked dead. He was not breathing on his own and not moving at all. The hemorrhage would by now be hours old, and these bleeds often killed within minutes.

"There is nothing to lose," Spetzler finally said. "If we do nothing, he will die for a certainty. If we do this, he *probably* will die. If we do these very difficult things, we're going to lose most of the time. But if we don't do them, we'll lose all the time."

Sonntag recalled, "From the moment he thought of his approach, as impossible as all this sounded, I knew we were going to do it."

Impossible because this was neurosurgery without rehearsal, without choreography, without precedent, and complex beyond what anyone would attempt without prior reported cases to follow as guides.

Rekate remembered, "Here we were about to start on a daunting, complex procedure that had never been tried before, going to do it *now*, and Spetzler was very calm about it." Neurosurgery is certainty. The neurosurgeon is confident and fears nothing. Because deep down the neurosurgeon fears only the form in which death usually pops up: Surprise! "There's nothing to lose!" Rekate said. "Imagine. There was everything to lose and every likelihood we were going to lose it."

But for Spetzler this was a defining moment of his vision of Barrow. The complete neurological institute was built by tackling any elective case with consummate skill. These are the rehearsed procedures that help neurosurgery advance incrementally, each victory the product of three interwoven factors: the surgeons' skill, the perfect cooperation of the entire medical team, and new technology. "You always trained to be your best," he says. "It's the

technological advances that permit your best to be far ahead of what had been possible."

But the measure of how far you had come was here—the emergency case that in the heartbeat before this moment would have been a fatality, brought by the advances in emergency medicine into your hands in that broadened state of near-death. What were the respirator and the pressure suit worth? What was the value of the sophisticated training of paramedics? It stretched the fine line of death into a broad blur, and that blur could now be called opportunity.

At 2 P.M. Rekate told Kerry Mathias the grim odds. He believed there was one chance in twenty the neurosurgical team could save Timmy's life. Not that he would recover or even regain consciousness, Rekate warned, only that he would live.

"Do whatever you can," she said.

Rekate wonders in such moments what "informed consent" really means. "Patients, or those responsible for them, don't really hear the negatives; they can't. They trust you to be right. In this case, we knew we were right. I didn't see how we were going to save him, but by that time, there wasn't any doubt about his chances otherwise. Each time we looked at a new film, we were shocked all over again."

The team sent spine fellow Papadopoulos to do an on-line computer search through medical journals, through the history of such traumas as recorded in case reports, hunting for any slim comfort, any precedent that would offer hope. He found none.

Even as Spetzler judged there was nothing to lose, Rekate feared what there was to lose: Timmy, who might survive on a respirator, in a chronic vegetative state.

And then what? Kerry did not let herself think of "then what's."

"One day at a time," she said.

TJ had been in a soft collar and strapped to a backboard, a position not nearly stable enough to hold his neck in surgery. The surgeons ordered a halo brace that would immobilize him as much as possible, and the orthopedics department had to cut one down to size. That meant more delay.

It was now after 6 P.M. Tom Graham had just finished inserting the tube into the top of TJ's skull that would relieve pressure if fluid built up. He was in the halo—which resembles nothing more

than a medieval torture device. A lambswool-lined jacket is fitted tightly around the chest. From it emerge four black-steel rods, running upward and inserting into clamps in the black-steel halo, which holds the head utterly rigid with a series of screws that bore through the scalp and into the skull bone. Not until the halo was in place could they roll TJ onto his stomach. Neuroanesthesiologist Steve Shedd, fresh from Jack Schulte's surgery, administered the intravenous painkillers and inhalation anesthetic, and they set to work.

Rekate, assisted by Graham, cut down to the spinal cord, exposing the spinal processes that rise as long, sharp spikes straight out from the vertebrae. To these spikes are attached the powerful muscles of the back and those that hold the head up. It is always a bit of a shock to see the processes emerge in surgery; they give the human the look of having a dorsal fin, the spikes rising a good four to five inches out of the spine. It takes a lot of power to hold the head up. An adult's head weighs between twenty and thirty pounds and, wagging at the end of the neck, all the leverage works against the muscles that must control it.

Rekate and Graham step back and Spetzler steps in, prying around to the front of the spinal chord; now, on the intraoperative monitor, they can see the clot. Blood oozes, but it is dark and congealed.

"I don't know how we're going to stop that bleeding," Spetzler says, a measured, disembodied voice ever calm through any crisis. Sonntag watches the monitor, waiting. "If he dies, it will be his brain injuries that kill him," Sonntag says, brow wrinkled. "And I don't see how they can *not*. I just don't believe anyone has ever survived such trauma to the brain stem." He will prove correct. No one ever had.

What they fear most is an upwelling of bright, new blood, a hemorrhage that might have been held back so far by the pressure of the clot enclosed within the brain's membranes. Martin Nune-macher, the EEG technician who is monitoring Timmy's vital signs, points out that blood is a tremendous irritant to the brain, which depends on its oxygen. The neurons normally are protected by other brain cells and by an array of fibers and membranes from the caustic, alkaline blood. Only oxygen, water, nutrients, and a surprisingly small number of chemicals can cross the "blood-brain

barrier." Bleeding in the brain often leads to epileptic seizures—electrical storms in which neurons damaged by the blood fire out of control.

There is no new blood.

Sonntag now uses pliers to wrench out strips of bone from TJ's hip, strips containing marrow. He needs the marrow as seed-tissue to form new bone at the juncture between the skull and the shattered C1 vertebra. As Spetzler finishes draining the clot, Sonntag takes over, beginning the arduous process of attaching his clamp. He painstakingly wires the open ends of the "V" to the cervical vertebrae below the shattered C1. Then he fastens the point to the skull with wires looped through tiny holes drilled in the bone. And finally he squeezes the living hip marrow into the fissures of C1, where if all goes well, hard as it is to believe, it will root and grow solid.

Each of the surgeons says in turn, "That's about all we can do," then explains why it all now rests within the boy, to heal or not, if able or not. But they are all still restless. It is after 9:30 P.M. Spetzler walks repeatedly to the lighted x-ray frame, lost in thought; Sonntag paces, his hands tucked under his armpits.

"That's about all we can do."

They are not satisfied, they want to do something more. But there really is nothing more. Rekate and Graham begin the long process of closing.

It is after midnight when Rekate meets with the Mathiases, and for the first time he can be a bit optimistic. "We accomplished exactly what we set out to do," he tells them. "There's nothing we can do now but wait. The next twenty-four to forty-eight hours should tell us a lot about whether he'll recover."

When Kerry and Tim Mathias stepped into the darkened room of pediatrics intensive care, early on the morning of April 27, they had not seen TJ for more than a day. He lay propped nearly upright by the halo brace in the cranked-up bed. His face and mouth were bloodied and tubes were coming out of him, everywhere it seemed. His face was swollen so badly, Tim remembers, "It looked like the pins from the halo went right through his head." Then they emerged, Kerry in tears, Tim so upset he could not

speak. He had wept on his brother's shoulder that afternoon, the first time in twelve years of marriage his wife had seen him cry. He was not crying now, she noticed. "He was turned to stone."

Think about this, in the profound quiet of a hospital night. Stephen Papadopoulos has reviewed the medical literature. So far, there were few C1 fracture cases to "survive"—that is, to be anything other than DOA at the hospital—and these "survivors" fell into two groups. First, there were those who suffered no brain bleeding or other damage, a fraction of that already-small number of survivors, but most of these recovered if the fracture could be mended, and not one of them had had the complete cleavage TJ had suffered. And then there were those who suffered brain injury, to any degree, of any kind. The latter all died, or worse: They became respirator-dependents. Vegetables. All dead or worse.

The hands of April 26 had done a remarkable job, woven a breathtakingly meshed tapestry. But there needed to be something more than hands at work now. Maybe it would just depend on an innate physical strength of the boy in the halo, an inborn ability to come back from the edge; maybe feelings were needed, transmitted through hands and gentle voices, an assurance that Mom and Dad were there and that other people cared about and loved him. Maybe all of the above or something still not mentioned were needed. But at the moment, the boy was still a statistic. He breathed, his heart beat, not by will but by respirator. Was *he* in there?

Family album. Here is the baby book of Timothy I. Mathias, Jr. While he is still a toddler, his mother begins calling him "TJ"—for Tim Junior. "He walked when he was nine months old," Kerry says. "He stood up at seven months, and almost as soon as he walked, he was climbing stairs and climbing out of his crib. TJ always did everything fast." Agile and strong, he still had early health problems, with allergies to citrus and dairy products. "He was in the hospital a lot," she recalls. "We'd spend a lot of time at the shore then, because the air was clean and he could play in the sand. But even when he was in the hospital, one year old, they had to put the IVs in his scalp—he'd yank them out of his arms." By age five, the allergies had disappeared.

And there is the blue bike with its beaming owner.

"Off to school again!" Kerry has written under an image of a shorter version of TJ wearing a red backpack, ready for second grade. He doesn't look much different in the current photos, just taller. Christmas '86: Transformers electric racing car set with proud proprietor.

Here in earlier pages is Tim, leaning up against his car, his hair dark brown. Now, at twenty-eight, it is prematurely grayed. And Kerry, smiling up from the kitchen table, looking much the same as she does today, with honey blond hair. "That was actually the night we met," she says. And he comes back with a response few husbands can match: "April 9, 1977." At his father's house in Bradley Beach, New Jersey. Both Kerry and Tim come from large families, extended by remarriages on both sides. Tim's stepmother considered Kerry's mother like family. Tim's own parents had divorced and remarried, and he was visiting his father's house that evening, as Kerry was. Timothy I. Mathias—he has no middle name; his initials spell T. I. M.—was a junior at Point Pleasant High School. Kerry Konner was in the same year at Asbury Park High. Both would graduate a year later.

Tim had been raised in Phoenix until he was seven, then returned to New Jersey with his mother. Two of Tim's brothers already lived in Phoenix. In the summer of '88, when the Mathiases got to California, their original destination, they found the prices staggering. Tim suggested returning to Phoenix until they built up a nest egg. Bob Jackson, with full gray beard and long hair, looks like an adventurer, and he had been more than happy to go along on the journey. Injured in an auto accident years earlier, he could no longer follow his trade in heavy construction. The dry heat of Phoenix would be a tonic for his leg, which carries two pins from the accident. But the jobs were no better here than California, and not as good as in New Jersey.

It was just supposed to be a temporary setback.

"TJ, Mommy is here. Daddy is here. Rachel is outside with Bobby. Everything is going to be fine. You're going to get well. Your uncle Ernie and all your cousins are outside. Your aunt Diana is outside. Can you hear me? You're in the hospital, but everything is O.K. now, darlin'."

In 4 ICU, the intensive care unit where virtually all neurosurgery patients spend their first nights, sometimes all their remain-

ing nights, Jack Schulte lies in a deep barbiturate coma. Down here two floors, in Peds ICU—the pediatric intensive care unit—Timmy Mathias lies in deep coma from which it seems impossible he will ever emerge.

A gurney moves on squeaky wheels down the dark corridor. Wheels and more wheels; the hospital moves on wheels. Gurneys, elevator wheels grinding, wheelchairs, beds, fluid stands wheeling behind, helicopter rotors, ambulances. So night circles and climbs into morning, one day higher on the calendar, Thursday, April 27.

Appendix II

Twelve

The burn unit at Children's Hospital is on the third floor, a corridor away from the intensive care unit. The ICU is in the Blue section of the hospital, the burn unit in Green. The two units share a common waiting room, a large room full of chairs and couches, just outside the ICU doors.

Inside the burn unit Richard, the four-year-old with the oddly symmetrical burns on his forearms, slept soundly in a bed that was probably far more comfortable and safer than the one he was accustomed to. The nurses are always especially kind to kids like Richard; as soon as he got to the burn unit they got the rest of his clothes off him, bathed him, washed his hair, dressed him in the yellow circus-print pajamas that are standard issue at Children's, and chatted and cooed with him until he finally began to smile and even to talk a little.

They also discovered his great weakness: ice cream. They'd had a tough time in the beginning when they tried to bathe him; he seemed strangely afraid of baths. When he realized he had no choice, he froze up and became stoic, but he relaxed when the nurses let him choose the water temperature he wanted.

His arms were still red, but with the soothing ointment, he seemed comfortable enough and, after the bath, when the nurses had offered him ice cream, he let the nurses feed him the first spoonful, then took over and fed himself the rest. Then, when he was finished, he began crying for no apparent reason. It was the first time he'd cried since coming to the hospital. The nurses, who understand such things, cuddled him and let him cry awhile, then gave him more ice cream.

One of the surgical residents stopped by; he did a cursory examination of Richard and nodded knowingly when the nurses described how differently the boy behaved in the presence of adult males. He had begun to loosen up, and accept hugs from the nurses, and even

to talk a bit, but when the resident walked in, the boy had stiffened, and while he had been perfectly polite and responsive, he was clearly tense and answered the resident's questions in monosyllables.

"I'm not surprised," the resident told the nurses. "I saw his X-rays." Whenever the trauma staff suspects that a child has been the victim of abuse, they often order a whole-body X-ray. Although the official memorandum interpreting the X-rays would not be put into Richard's medical record for several hours yet, the news travels faster. "Evidence of at least two and maybe three old fractures," the resident said grimly, "all of which appear to have healed on their own. Somebody has really banged this kid around."

The nurses shook their heads. How could anybody deliberately hurt such a cute kid? Finally one of the nurses spoke up, to no one in particular. "You think it would hurt to give him a little more ice cream?"

• • •

Down the hallway, outside the closed double doors that isolate the burn unit from the rest of the floor, Richard's mother spent the night in the ICU waiting room, where her disheveled appearance fit right in with the other haggard-looking parents who slept there. Twice during the night she roused and phoned the nurses in the burn unit. "He's fine. He has a fever, but he's resting comfortably, and he's doing fine," the nurses reassured the mother. The part about the fever was true; Richard had a temperature of ninety-nine, which was not at all alarming, but was a good excuse to keep Richard under wraps. The nurses did not invite the mother to visit.

When the mother called the third time, the nurses let her come see Richard, but first they tacked elaborate Isolation and Infection Hazard signs on the door to Richard's room, and they dressed the mother in a sterile gown and cap before escorting her into the room. Richard seemed genuinely glad to see her, hugged her gingerly, and cried a little at first, but then he insisted on hugging the two nurses who were in the room with them. "I got ice cream," he told his mother solemnly.

After a few minutes the nurses declared visiting hours over, and the mother dutifully went back to the waiting room. The nurses caucused, and after several minutes' discussion concluded that the mother might not be the primary culprit. The boy's reactions had been, for him,

Alan Doelp

In the Blink of an Eye

appropriate. They made extensive notations in Richard's medical record and had a long chat with the nurses who relieved them at shift change.

Shortly after shift change, a physician from the Division of Child Protection came to the burn unit, examined Richard, and read the notes in Richard's medical record. The nurses mentioned the X-rays, and the physician phoned the radiology department for details. Then she phoned the Washington, D.C., Department of Human Services, and after that, the police.

An hour later, the physician, a D.H.S. social worker, and a police detective met with Richard's mother and her fiancé, who had arrived at the ICU waiting room only a few minutes earlier. The confrontation was low-key, almost gentle, but businesslike.

"Our concern," the physician explained, "is for Richard's welfare. That's the most important thing. I think we all agree on that." The couple nodded.

"We are especially troubled because Richard's injuries don't match the explanation we've gotten about how those injuries occurred. This has caused us to be concerned that Richard has been a victim of child abuse.

"Whenever we think there's a possibility of child abuse, the law requires us to notify the appropriate authorities and take steps to protect the child, and we have done that. Richard is safe, I can assure you, and is receiving excellent care. The next step is to try to piece together exactly what did happen to Richard yesterday, and we hope you'll work with us and help us. I know that you want what's best for Richard, just as we do."

Child abuse, the physician knew from long experience, doesn't happen in a vacuum. It almost never happens in cold blood, only in anger. Figure out the underlying circumstances, and you can often fix the problem. Establishing some kind of communication with the parents is the first step in that process.

But meanwhile, until everything could be sorted out, the physician explained, the state had assumed temporary custody of Richard and had gotten a court order requiring someone from the hospital to accompany Richard's mother, or her fiancé, whenever they visited Richard.

Throughout the conversation, Richard's mother nodded quietly. At

one point, she brushed away a tear. Her fiancé remained polite but grew visibly more tense as the conversation progressed. Finally, he stood up, excused himself, and walked out of the room. He did not return.

Thirteen

Dr. Riad Karmy-Jones learned about David Myers when he reported to work at 5:00 A.M. Surgical residents get a day off every other weekend and usually spend the day sleeping. Karmy-Jones, who appeared not to require sleep, had spent the day sightseeing in Washington.

Officially, Karmy-Jones was at Children's to study general pediatric surgery for three months, and, indeed, he had watched, and had often assisted in, major and minor surgery of almost every kind. But what attracted him most were the trauma cases. He intended to make trauma his surgical specialty. In his native Canada, trauma medicine was still largely an ad hoc matter, left to individual hospitals. Some were very good, others very bad. The Canadian Parliament had recently been acting to change that, and before long trauma care would be an official part of Canada's National Health System. Karmy-Jones would be one of the first U.S.-trained traumatologists to work in that new system.

It was K-J's habit to make a quick tour of the ICU the first item on his morning agenda; any overnight trauma cases, any interesting ones, would be there. This particular morning he spotted little David as soon as he rounded the corner, buttonholed David's nurse for five minutes of details, then headed for the nursing station to read David's chart. By the time everyone mustered for rounds at six, K-J knew as much about David's case as anyone in the hospital.

Bedside rounds are a firm tradition at every teaching hospital. They ensure that every resident knows the daily progress of every case on his service so that, somewhere in his career when he sees another case just like it, he will at least have a reference point. The advantage to the patient is a great deal of attention from a great many doctors. Residents are M.D.'s doing postgraduate work in their chosen specialty. Surgical residencies last four or five years, following which the

surgeon is eligible to begin working toward final and formal certification by the American Board of Surgery. Meanwhile, the operative word is *work*. Residents provide cheap skilled labor at teaching hospitals, and in most teaching hospitals they work brutal hours.

Children's is no exception. Residents are on call one day out of three. The day they are on call, they must stay all night in the hospital, where they are available to the nursing staff for any questions or problems that may arise. If there are no problems, the residents can sleep, but there are few nights when there are no problems. At 6:00 A.M., the resident goes off call but does not go home. The off-call day is a normal work day—beginning with bedside rounds at 6:00 A.M., followed by a full day in the OR, observing or assisting one of the five staff surgeons, and ending with evening bedside rounds which begin whenever the OR schedule is complete. Residents are grateful when the work day lasts only twelve hours.

There are two surgical chief residents at Children's. A chief resident is a finished surgeon who desires additional intensive training in pediatric surgery. Chief residents are hired for overlapping two-year terms, called fellowships. The chief residents supervise all the other residents, deciding which residents will assist or observe which operations, who will work what schedule, and so on. Chief residents also decide what time morning rounds will be held.

Mary Fallat, the senior chief resident, liked to start at 6:00 A.M., which usually meant the rest of the residents had to get there at 5:00 A.M. to check on all their cases. Residents quickly learned that it was unwise in the extreme to be unprepared when Mary Fallat conducted rounds. Fallat—gentle, soft-spoken, and unfailingly polite—had an almost supernatural ability to ask the one question a resident was not prepared to answer. Residents had been known to pull out their old medical textbooks to bone up before rounds; Fallat appeared to remember every word of every textbook she'd ever read, and she had a stubborn notion that bedside rounds should be used for teaching such things to the residents.

Rounds begin in the intensive care nursery, an almost surrealistic place where tiny infants lie unmoving in bassinets, swathed in tubing and dwarfed by the gleaming machinery that keeps them alive. A small but predictable percentage of all children are born with birth defects; of that number, an equally predictable majority can be made whole by surgery. Children's Hospital attracts patients from all over

the world, and many of them are attracted by the reputation of Dr. Judson Randolph, who has made the surgical repair of birth defects his personal specialty. At any given time, the intensive care nursery will have two dozen or more recovering infants.

Most of Mary Fallat's residents will go on to be general surgeons and will never personally attempt any of the highly sophisticated and delicate operations, such as transforming a hermaphrodite into a little girl, or even the very mundane procedures, such as removing a sixth finger or toe. But having seen many such cases, they will remember in a general way what was done and what the outcome was, and they will know how to counsel distraught parents and where to send such patients for treatment.

The residents, some in scrub suits, some in street clothes, all with sterile gowns draped around them, clustered around the first bassinets.

It is necessary to stand close during ICN rounds; voices must be kept soft.

"Who has this patient?" Fallat asked. A resident straightened, cleared his throat. Fallat nodded, and the resident launched into the standard presentation.

"Barbara is six weeks old, and this is her third postop day following an NEC resection," the resident intoned.

There are always NEC babies in the intensive care nursery; NEC is short for *necrotizing enterocolitis*, an inflammation of the bowel so severe that, left untreated, it destroys the bowel and kills the infant. The standard surgical therapy is to open the abdomen, snip off the inflamed portion of intestine, then close the incision partway, leaving the two cut ends of the intestine in view so that the surgeons can make sure the inflammation will not return. Once they are sure, they can suture the bowel back together, and the child can go home.

"Barbara's vital signs are all stable," the resident droned on, reciting heart rate, blood pressure, temperature, and other relevant numbers. "She appears to be progressing normally and without complication."

"When would you close the ileostomy?" Fallat asked.

The resident stopped with his mouth open. He knew that the cut ends of the bowel were kept outside the child's abdomen so that the child would not become infected by his own waste. He also knew that at least once every day he had to inspect the ileostomy, looking for

signs of inflammation. And he knew that the nurses kept close watch over the baby's temperature, and that she had been free of fever for several days. But when to repair the bowel? . . . The question hung in the air.

Fallat tried again. "At what point will it be appropriate to repair the bowel and close the incision?"

The resident answered slowly, carefully. "I would say that when we are satisfied that the inflammation will not recur, it would be appropriate to close the incision."

Fallat nodded. "Right. And how will we know that?" This time the resident was stumped. Fallat let the question hang a few seconds, then answered it herself. "When Barbara begins to thrive, we will know that her intestine has begun to function again. So when she begins to grow, to gain weight, assuming she has remained afebrile, then that is the appropriate time to consider closing the ileostomy." She turned away, and the crowd of residents moved a few feet and reclustered around the next bassinet. "Who has this child?" Fallat asked.

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It was close to 7:00 A.M. by the time Fallat and the clump of surgical residents reached the bedside of little David Myers. Fallat smiled when Karmy-Jones spoke up unprompted and began reciting David's story as though he had personally admitted him.

"David's a four-point-five-year-old male struck by a car and thrown fifty feet. He has a closed head injury, bilateral pulmonary contusions, bilateral femur fractures. And a broken clavicle," he added, to be complete. Nobody cared about the clavicle.

"He has not been conscious since the accident," Karmy-Jones went on, "and he has become progressively less stable over the last several hours."

The dilemma, Karmy-Jones explained, was that David's injuries tended to feed on themselves and grow. His head injury had caused his blood pressure to drop, while causing the pressure inside his skull to go up. If the pressure inside the skull exceeded the pressure inside the arteries, then no blood would circulate to the brain and the patient would die. Already, overnight, David had had several crises when blood pressure had dropped and cranial pressure had risen to within a few perilous points of each other. In one case, the ICU physicians had had to open the pressure monitor in David's skull and simply let

the excess fluid drain out. After that, they gave David diuretics to flush out excess fluids and kept his blood pressure artificially elevated by injecting Adrenalin into his intravenous lines.

Karmy-Jones took a deep breath. He still wasn't finished. Matters were made worse, he said, by David's lung injuries. The bruises on his lungs made it necessary to keep David's respirator operating with positive end expiratory pressure; unfortunately, PEEP also causes cranial pressure to rise, and therein lay the true dilemma: The treatment for the injury might be as fatal as the injury itself.

The ICU physicians had carefully straddled the fence all night, keeping the respirator at the minimum setting capable of producing good blood gas readings and fighting the bouts of increased cranial pressure as they came, one by one. So far they had been successful, and David appeared to be stabilizing at this time, but the boy was still on very shaky ground.

"The next twenty-four to forty-eight hours are critical," Karmy-Jones observed. "If we can keep him relatively stable for that period, then he has a good chance of recovering to some degree." It was a grim assessment: to some degree. Translated, it meant David might very well die. Or he might survive to be a vegetable. Or he might only be seriously crippled. It was a poor set of choices.

Over the next two days, Karmy-Jones all but adopted little David Myers. He visited the bedside almost hourly, chatted with Mr. and Mrs. Myers, answered their questions, even took them to the X-ray department to show them David's CAT scans and explain the significance of the brain swelling. Several times a day, he tracked down Mary Fallat for consultations. This was not merely etiquette; residents do not make medical decisions without first getting the chief resident's approval. Mary Fallat, in turn, consults with Marty Eichelberger several times a day. Through this chain of command, Dr. Eichelberger personally—albeit indirectly—supervises the treatment of every child admitted to the trauma service. But even though Drs. Eichelberger and Fallat were directing David's care, it was Karmy-Jones who applied it.

At the bedside, K-J was forever fine-tuning the treatment, adjusting the mix of oxygen and air flowing through David's respirator, adding this drug or that one, discontinuing some other. Gradually, David grew more and more stable. The fluctuations in blood pressure grew less, and when K-J experimentally stopped giving David Adrenalin,

the blood pressure dropped a little but then stayed steady. The cranial pressure monitor showed a figure that varied less and less, staying safely in the high teens.

At Tuesday morning rounds, K-J suggested that it was time to discontinue the drug that was keeping David paralyzed. As long as he remained paralyzed, K-J argued, it was impossible to wean him off the respirator, and indeed it was impossible even to tell if he was ready to begin the weaning process. This should be done quickly, he argued; patients left too long on a respirator become physically dependent on it; the longer they stay hooked up to the machine, the harder it is to wean them away from it. There was general agreement among the surgical residents and, more important, the chief resident agreed. By midmorning, the last dose of Pavulon had worn off, and David responded by swinging his legs, and occasionally moving one arm. He did not open his eyes.

By the time rounds were conducted on Wednesday, David's eyelids had begun to flutter, and he had begun to assist in his own breathing. K-J had gradually reduced the setting of the respirator, and David was making up the difference. The breaths were shallow, but they were there, and the computerized display at the bedside showed a respiration count in the forties and fifties, as David's lungs matched the mechanical efforts of the respirator. If he continues to progress, K-J said, we should try to extubate him tomorrow. Everyone agreed.

The nurses in the ICU routinely shoo parents out and into the waiting room just before the residents arrive for morning rounds. Part of that is tradition, a tradition that says you always keep the number of people in the ICU to a minimum. Another part is precaution: Residents on rounds tend to speak bluntly and to speculate, sometimes inaccurately, about a patient's condition and prognosis. There are discussions, and sometimes disagreements, about which way to proceed. Such discussions are entirely proper in a teaching environment, and the bedside gathering is, if nothing else, a classroom with legs. Ultimately, the patients benefit from the dozen-odd second opinions.

But parents, the ICU nurses have learned, do not. They often resent listening while their child is discussed abstractly; more important, they often know just enough medical lingo to understand some of the more pessimistic comments. To make matters even worse, the residents on rounds are always in a hurry. They have several dozen cases

to discuss each morning, so they move from bed to bed rapidly, spending little if any time on explanations or courtesies. So if a parent happens to be in earshot and has become alarmed at what he overhears, he will certainly become angry as well when the group of doctors abruptly leaves without offering explanations or reassurances.

The ICU nurses long ago decided that parents did not need or deserve such aggravation, so the firm rule is that parents have to leave during rounds.

David and Patricia Myers didn't particularly mind when it was time to move to the waiting room; at 6:00 A.M., whoever was at little David's bedside was usually exhausted, and grateful for a chance to sink into one of the soft couches in the ICU waiting room. It was one of the few predictable, routine events in their lives at the moment.

On Sunday, the shock and grief had been a private matter just for Mr. and Mrs. Myers. By Sunday night, Pat's mother and younger brother had arrived from Georgia, and the four of them slept—or tried to sleep—in the waiting room. This was highly unsatisfactory since there was only limited couch space available, so they began shuttling back and forth between the hospital and the Myers's apartment.

Then on Monday, the visits and the phone calls began. Cards arrived from friends and acquaintances at the FBI, at the weather service, at their church. Pat's fellow secretaries in the FBI's public affairs office took up a collection and bought a stuffed animal for little David. It was delivered, in person, by Pat's boss, a deputy director of the FBI.

The phone at the apartment rang constantly, and before long so did the phone in the ICU waiting room, as more people learned that number. David and Patricia Myers had not thought of themselves as socializing people; they were impressed, sometimes almost overwhelmed, at the outpouring of sympathy and support from friends, relatives, coworkers.

After the chaos of the first few days, they settled into a sort of routine. One of them always stayed at the hospital; one of them was always there, around the clock; the other would take the car and run errands, go shopping, tend to the everyday chores. Pat's mother took charge of the apartment and made sure everything stayed in order there; her brother learned the route between the apartment and the hospital, so he could help with the chauffeuring duties.

Most important, they divided up bedside duty. Most of the time, David and Pat themselves stayed with little David. One would sleep while the other sat at the bedside. After a few hours, they would switch places. Except when the nurses shooed them out during rounds, one or the other of them was nearly always in the ICU.

Pat was there when the child in the adjacent bed died. There is scant privacy to be gained from the thin curtains that can be drawn around an ICU bed; Pat, sitting close to little David's bed and squeezing his hand, heard every word, every shriek and sob from the parents, until one of the ICU nurses, with a briskness that surprised and angered Pat, ordered her to wait outside. Pat's own nerves were frayed by worry and lack of sleep; once in the waiting room she sat, seething, for a long time. Then she cried for awhile. Finally, she fell asleep.

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Shortly before 9:00 A.M. on Thursday morning, Karmy-Jones assembled a small team of physicians and nurses at little David's bedside. Mary Fallat had approved the decision at rounds that morning, but now, with an anesthesiologist, a neurosurgery resident, and a specialist from the ICU all present, K-J went over the facts one more time.

"We've weaned him down to minimal settings," he said, nodding at the respirator. "His cranial pressure has been steady for the last two days, and despite the fact that he has not fully regained consciousness, he appears to be ready to breathe on his own. Can anyone think of any reason not to extubate him?"

The doctors exchanged glances and shrugs. One by one, they looked at K-J and shook their heads. No objection, doctor. Proceed.

With a final glance at the monitors, K-J began peeling away the mask of adhesive tape that held the respirator tube firmly in place. Little David's eyelids fluttered slightly as the tape came away, leaving tiny white flecks of adhesive clinging to his skin.

When the tube was completely free, K-J grasped the blue plastic tube that led to the respirator. He looked at the bank of electronic monitors once more; pulse was 110, respiration 44, cranial pressure 10. He looked at the anesthesiologist; the anesthesiologist nodded and stepped forward. As K-J stepped back, he popped the respirator hose off the airway tube.

The respirator alarm filled the ICU with a high-pitched peeping

noise. David's ICU nurse edged around the group, adjusted the controls on the respirator, and the peeping was replaced by a tense silence.

The anesthesiologist placed his left hand over David's jaw, grasping the airway tube with his right. With one swift, continuous motion he drew the tube out of David's windpipe. White mucus dripped from the plastic tube; the anesthesiologist tossed it into a trash can. No one spoke. All eyes were on little David's chest. It didn't move.

The instinct to breathe is the most primitive of all instincts, yet it is based on a complex interaction of brain cells, nerve cells, and blood chemistry. As the cells of the body use oxygen from the bloodstream, they replace it with carbon dioxide. Sensor nerves measure the carbon dioxide level in the blood, and as it increases, the nerves send increasingly strong signals to a tiny area near the base of the brain that, in turn, sends increasingly urgent messages to the diaphragm. Eventually, the diaphragm flexes, expanding the lungs and bringing a fresh supply of oxygen into the body.

The sweep second hand on the wall clock moved a quarter circle, then a half. It took forty seconds for little David to take his first spontaneous breath, a loud, rasping gasp that filled his lungs to capacity. Five seconds later, he took a second breath, then a third, then a fourth. The breaths were labored and jerky, but they were breaths. The team at David's bedside began to relax.

Then the neurosurgeon, his face impassive, pointed a finger at the bank of monitors. The pressure inside David's head had begun to increase. As K-J watched, it climbed past 20, 21, 22, 25. . . .

"Come on, David, just relax and breathe for us," K-J said aloud. As he spoke, he reached over and stroked David's forehead. "Breathe for us, David."

David's chest heaved erratically, several shallow breaths followed by deep gasping ones, followed by long pauses. The intracranial pressure monitor continued to climb, 38 . . . 40 . . . 44. . . .

"What's the limit?" K-J asked the neurosurgery resident.

"He can tolerate it for a while," the neuro man replied. "Let's see where it peaks."

David's breathing became more rhythmic, but also more rapid. The anesthesiologist held a hissing oxygen mask near David's mouth and nose. The extra oxygen seemed to help a little; the rasping breaths became quieter, but still rapid and shallow, almost panting. The entire team stood, saying nothing, all eyes fixed on the cranial pressure

monitor. The number was climbing more slowly now, but as the team watched, it jumped from 50 to 52, then 54 . . . 55 . . . 58. . . .

"How much?" K-J again asked.

"Not yet, not yet. Wait for a peak," the neurosurgery resident answered.

David's breaths were rapid and shallow. Just below the cranial pressure figure on the electronic readout, a second number showed David's respiration rate: It was steady at 70, more than one breath a second. The cranial pressure monitor read 64.

"Any theories?" K-J asked the neurosurgeon.

"Whatever it is, he's not ventilating right," the neuro man answered. "Maybe it's the lung contusion. Maybe he has some sort of mild airway obstruction. Maybe that part of his brain is damaged. All I can tell you for certain is that he's not behaving the way I would like him to." As he spoke, the cranial pressure reading passed 70, then 71 . . . 74 . . . 77. "Okay, we're getting into the danger zone now," the neurosurgeon said.

K-J looked at the anesthesiologist, who nodded. There was no need for discussion. The anesthesiologist pressed the oxygen mask firmly over David's mouth and nose and began rhythmically squeezing the black bag attached to the mask, forcing pure oxygen into David's lungs. The cranial pressure reading reached 84, then began to move downward, 82 . . . 78 . . . 75. . . .

"Pretty clearly a respiratory problem," K-J observed to his neurosurgeon colleague.

"Not necessarily," the neurosurgeon replied. "You could get the same result from a brain lesion. I'm going to order another CAT scan; if this is the result of brain swelling, then we can hope it will get better as the swelling decreases. If the swelling is gone, then we have to consider the possibility that the damage is permanent."

K-J stared bleakly at the tiny body on the bed. As he watched, the anesthesiologist expertly slipped a fresh airway tube into David's windpipe, taped it securely into place, and reattached David to the respirator. The cranial pressure was down to 43 . . . 41 . . . 40. Nursing homes are full of ventilator-dependent, brain-damaged patients; it is a phenomenon created by the advent of trauma centers. Before the days of the Children's Hospital Trauma Center, little David would surely have died of his injuries; with sophisticated machinery, experienced physicians, and expert nursing care, the trauma team had kept

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him alive. Each day his chances of survival had improved, and now he was almost certain to live. But for what?

As he turned and walked away from the bedside, Karmy-Jones wondered, for the first time, whether they had done little David any favors.

Vita

Wynne Leverett Brown was born in Detroit, Michigan, on December 4, 1950. She attended elementary school in Cranbrook, Michigan until 1959, when her family moved to Stockholm, Sweden. There she attended the local Swedish public school and The English School until 1962, when the family was transferred to Louisville, Kentucky. In 1963, she entered The Beard School in Orange, New Jersey, and remained there until graduating from high school in 1969.

The following fall she went to Skidmore College in Saratoga Springs, New York, graduating in 1973 with a Bachelor of Science in Studio Art with a concentration in printmaking. She then moved to Portal, Arizona, where she worked as assistant director of the Southwestern Research Station of the American Museum of Natural History. In 1974, she entered the University of Arizona, Tucson, and in 1976 she received the first interdisciplinary Master of Science degree in Biology and Scientific Illustration.

In 1976, she moved to Australia where she spent two years working as a freelance biological illustrator and consultant. In 1978, she moved to Knoxville, Tennessee, where she worked at the University of Tennessee for two years as a scientific illustrator. In 1980, she left the university to run a graphic arts business, Brownline Graphics.

In August, 1990, she entered the University of Tennessee, and in August, 1993, she received a Master of Science degree in Communications.