Abstract

Studying the history of medical education helps teach us that medicine is a social activity that occurs in the context of social mores and customs. In 1971, a major new anatomy textbook aimed at first-year medical students was published, *The Anatomical Basis of Medical Practice*, written by Professors R. Frederick Becker, James S. W. Wilson, and John A. Gehweiler, emphasized surface anatomy, embryology, and radiographic anatomy.

At multiple places in the text, the authors used sexually suggestive and “cheeky” comments about women. A small fraction of the illustrations were stylized, posed female nude photographs purchased from California photographer Peter Gowland. These photographs, of a type typically seen in *Playboy* centerfolds or “pin-up girl” calendars, produced a firestorm of controversy. The book was criticized in the press and in reviews in scholarly journals, and a boycott was organized by the Association of Women in Science. The publisher received negative feedback from consumers, and the book was withdrawn from the market. The book is now a minor collector’s item.

Professors Becker and Wilson vigorously responded. They laid blame for the debacle on the publisher and also claimed they were the victims of a witch hunt by feminists.

*The Anatomical Basis of Medical Practice* appeared as the women’s movement became part of the American popular consciousness. It was also an era in which the public began to grapple with how to define pornography. Professor Becker and his coauthors thought that they were writing a witty, engaging, and funny book. Their detractors thought the book denigrated women.

A New Anatomy Book is Born

The Duke University School of Medicine radically changed its curriculum in 1966. In contrast to two years of basic science courses followed by two years of clinical rotations, the new curriculum moved all the core basic science classes to the first year, moved the core clinical rotations to the second year, and devoted the fourth year to clinical electives. The third year of medical school became a year of scholarship in which students pursued laboratory research, took elective basic science courses, or took coursework toward a dual degree.1

The introduction of the new curriculum affected Duke’s Department of Anatomy more than any other basic science department. Before the curriculum reform, 531 hours were assigned to the teaching of gross, microscopic, and neuroanatomy. The reform provided for a total of 252 hours: 80 for gross anatomy dissection and 20 for correlative lectures, 100 for microscopic anatomy, and 50 for neuroanatomy. The major burden of time lost was born by gross anatomy. Many members of the anatomy faculty considered it impossible to cover the subject in the allotted time, including Professor R. Frederick Becker.2

In a first attempt to create a revised 80-hour anatomy class, dissections were performed on adult cadavers, student dissections were done on fetuses, and extensive use was made of audiovisual models. The experiment was a failure. The students complained that they could not see what they were supposed to see in the fetus, and the faculty complained about the physical facilities. The next year the faculty attempted to make the course more clinically oriented and relied on lectures, demonstrations, models, audiovisual materials, and prosections. Once again, the course was a failure. Disgruntled members of the faculty, including Becker, began to offer a “rump course” in addition to the regular course—telling students that they would be ill prepared for clinical medicine by the new course. Dissatisfaction on the part of some of the students was probably encouraged by Becker. His disapproval of the course challenged the authority of department chairman J. David Robertson. Within two years, Professor Becker had left Duke. Two anatomists, James L. Shafland and Matt Cartmill, were hired to attempt a new iteration of the anatomy course. Their efforts resulted in the course still used at Duke: about 80 hours of dissection and 20 hours of...
correlative lectures (J.S.W. Wilson, personal correspondence, October 10, 2006). Becker was convinced, however, that he still had an important contribution to make in anatomical education.

Before and during the disputes over the Duke anatomy curriculum, Becker and two colleagues, James S.W. Wilson, MD, PhD, of the Pathology Department, and John A. Gehweiler, MD, of the Radiology Department, were working on a new anatomy textbook. In their book they emphasized surface anatomy, embryology, and radiology (J.S.W. Wilson, personal correspondence, October 10, 2006). They hoped to create a book with a clinical emphasis. Wilson had done residency training in obstetrics–gynecology and was particularly interested in devoting space in the book to female anatomy, an area he felt had been neglected in anatomy textbooks (J.S.W. Wilson, personal correspondence, July 17, 2008).

A graduate student working at Duke during this period remembers Becker as being “good with students, a wonderful, warm, and compassionate person, and every graduate student’s friend.” A curious aspect of Becker’s office, however, was that it was “plastered with Playboy centerfolds, female nudes and male nudes used for anatomical drawings. He has dozens and dozens of them posted and used them to help for illustrations for anatomy class in teaching surface anatomy” (R. Wiggins, personal correspondence, June 30, 2006). Becker’s fascination with surface anatomy, and his particular interest in the use of female nudes, would lead to one of the more curious episodes in the history of medical education. In our own student days we discovered that studying surface anatomy with a wife or girl friend proved to be not only instructive, but highly entertaining. Since the majority of medical students still tend to be males, we have liberalized this text by making use of the female form. But, more to the point, we have done so because a large portion of your future patients will be women and few texts have pointed out surface landmarks on the female.

An Easy-Going Literary Style?

Becker, Wilson, and Gehweiler approached Donald Powell, a medical illustrator at the Durham Veterans Administration Medical Center, in 1968 with the prospect of illustrating the book. Powell agreed to participate in the project. The four collaborators met weekly to review the previous week’s work and to discuss assignments for the forthcoming week. Proposed artwork, prepared by Powell, was reviewed by the other three authors, and suggestions were made regarding changes. Wilson attended to the preparation of many of the photographs of anatomical specimens and photographed the male model for surface anatomy illustrations. (The model happened to be Dr. Becker’s son.) Eventually, however, the production schedule fell far behind. Powell recalled that “our editor was constantly reminding us that we had to make up time in order to fulfill our obligations for the publication date, and a bickering and fault-finding atmosphere replaced the initial gung-ho attitude regarding work on the book.” Ultimately, Powell sold his illustrations to the other three authors and ceased participation in the project. Much of the writing was done by Becker, while Gehweiler was responsible for the chapter on radiographic anatomy (D. Powell, personal correspondence, January 4, 2008 and January 7, 2008).

The book was organized by body regions. The chapters followed the sequence of clinical examination from the surface to the limbs. Woven throughout the book was correlative embryology. A heavy emphasis was placed on radiology and clinical correlations. The authors sought to “use anatomy as a stepping stone to all of medicine. Our main emphasis was to invoke an appreciation for the ‘normal’ morphologic constitution of human beings. Strangely, despite our anatomically-oriented backgrounds, we are far less concerned with cadavers than we are with living, breathing individuals, the future patients of our students.”

Becker and his coauthors advised their readers that “all chapters are written in an easy-going, literary style so that any student could read ahead on his own without difficulty, fitting the other sections to the needs of his particular course structure. We have not felt that anatomy needs to be written in dead seriousness; neither have we felt that its presentation needs to be deadly.” Early in the book, however, several unusual sections appear:

The authors mused that, in the presentation of surface anatomy, perhaps, we should have included photographs of garden-variety, American males and females who have let their physiques go to pot. Instead, we used female models as model females. The student will see the ordinary specimen every day, only on rare occasions will the attractive, well-tuned specimen appear before him for consultation. He should be prepared for this pleasant shock. For the growing ranks of female medics, we included the body beautiful of a robust, healthy male. We are sorry that we cannot make available the addresses of the young ladies who grace our pages. Our wives burned our little address books at our last barbecue get-together.

A few pages later the authors, in their acknowledgements, extend the usual thank-yous to their collaborators and associates. They also, however, thank their wives, because “without their acceptance of this whole project and without their constant prodding, bless their mercenary little hearts, we might not be finished yet. They have spent long ago all of the nebulous royalties in fancy, if not in fact.” Scattered throughout the book, the “literary style” of the authors moves into the realm of cheeky comments about women. For example, in a line drawing of a sagittal section of female anatomy, the authors refer to “the young lady being attacked a la Lizzie Borden.” (“Lizzie Borden” refers to the violent hatchet murders of Mr. and Mrs. Andrew Borden in 1892. Lizzie Borden, their daughter, was tried for the murders and acquitted.) In extolling the importance of surface anatomy, the authors wrote:

In our own student days we discovered that studying surface anatomy with a wife or girl friend proved to be not only instructive, but highly entertaining. Since the majority of medical students still tend to be males, we have liberalized this text by making use of the female form. But, more to the point, we have done so because a large portion of your future patients will be women and few texts have pointed out surface landmarks on the female.

In the discussion of the anatomy of the back, Becker and his coauthors observe:

If you think that once you have seen the back side of one female, you’ve seen them all, then you haven’t sat in a sidewalk café in Italy where girl watching is a cultivated art. Your authors, whose zeal in this regard never flags, refer you to Figures III–IV and VIII as proof that female backs can keep an interest in anatomy alive. Referring to a picture of a nude female model at the beach, the authors note that “the contrast between exposed and unexposed parts of the epidermis is quite stark when the bathing suit is removed.” In a description of the chest, Becker et al
remark that “it seems a pity to leave the exterior of the thorax without discussing the female breast, an appurtenance far more charming than that of the male, far more useful, and of much greater clinical import.”3

The Photographer and the Photographs

In the acknowledgements of The Anatomical Basis of Medical Practice, the authors “thank Mr. Peter Gowland, internationally famous women’s photographer of California, for his generosity in providing the striking photos of female models used throughout the text.”3 Peter Gowland began his career as an actor in Hollywood in the 1930s and 1940s. He appeared as a bit player, movie extra, stand-in, stunt double for Ronald Reagan, and dancer in several films, including Born to Dance, The Great Ziegfeld, and Twenty Thousand Leagues Under the Sea. While working as an actor, he began photographing fellow actors for their portfolios and movie magazines.5 He developed techniques that became mainstays of glamour and fashion photography, including special lighting, and he also invented several cameras6–8 (A. Gowland, personal correspondence, June 21, 2006 and June 26, 2006).

Mr. Gowland and his wife and business partner, Alice Gowland, have authored more than 20 books on portrait and fashion photography, including special lighting, and he also invented several cameras6–8 (A. Gowland, personal correspondence, June 21, 2006 and June 26, 2006). Their work has also appeared in advertising and on calendars. Their work has also appeared in advertising and on calendars. The book was published in July 1971.

The controversial illustrations in The Anatomical Basis of Medical Practice, which constitute a small fraction of the illustrations in the book, are the Gowlands’ photographs of female nudes used to illustrate surface anatomy (Figure 1). Some of the pictures do not show the female model’s face. Others, however, include stylized, posed pictures. There are no photographs showing the pubic region, and all of the illustrations in the book of pelvic reproductive organs are black and white drawings. Alice Gowland, in defending her and her husband’s work for the textbook, wrote that “we have obtained world fame for our ability to photograph a female form with the highest degree of artistic integrity, emphasizing contour and form. The lovely figures shown are of professional models that take pride in keeping themselves trim and fit.”10

The Publisher Takes a Calculated Risk

The manuscript for The Anatomical Basis of Medical Practice reached the publisher, Williams & Wilkins, in 1970. Manuscript editing was assigned to a senior freelance copy editor who was shocked by the text and illustrations and concerned about a negative reaction by consumers. She expressed her concerns to her superior. Shortly thereafter, the head of redactory (copy editing), the vice president and editor-in-chief, the company president, the vice president for sales, and the editor for anatomy and radiology gathered to decide the future of the book. After lengthy debate, they elected to go forward with production (S. Finnegan, personal correspondence, December 16, 2006). The book was published in July 1971.

Reactions in the Press and by Reviewers

Not surprisingly, controversy surfaced as soon as the book was purchased, read, and circulated. A Baltimore newspaper published an article headlined “Anatomy for the lecher” (S. Finnegan, personal correspondence, January 14, 2007). Newsweek carried a story headlined “Anatomy lesson: How to jazz up a textbook.”11 The anonymous author described a rising chorus of objections to the book and commented that the reasons for the controversy are immediately apparent. For on one page after another are a bevy of voluptuous naked women, any of whom could reasonably aspire to be the centerfold of Playboy. One raven-haired beauty is shown splashing in the surf wearing nothing but a sultan; a toothsome blond, her torso turned to present her breasts at maximum advantage, is perched demurely on a garden swing. The picture of the brunette, the caption avers, demonstrates the effects of ultraviolet rays on the human skin; that of the blond in the swing is used to depict a numbers of points of anatomical interest, none of them below the navel.

Figure 1 Figure III-58b of The Anatomical Basis of Medical Practice shows a male torso’s surface anatomical landmarks and is cropped to hide the model’s face and genitals. The male model is posed in a nonsuggestive manner. Contrast this illustration with Figure 3-59, captioned “Adult female, landmarks of the abdomen” on the same page of the text. In general, throughout the book the male photographs are cropped to only show the anatomic areas of interest, whereas the controversial female photographs are full-body “pin-up girl” poses. (The original copyright holder, Williams and Wilkins Publishing Company, is now owned by Lippincott Williams and Wilkins, which no longer holds a copyright on the book. The author has obtained permission to reproduce them from Dr. J.S.W. Wilson.)
The Newsweek author pointed out that, when male models were used, pictures were cropped to show only the necessary part of the body. In contrast, in showing the anatomy of the neck, the “authors saw fit to use photos of three full-length nudes, each one posed like a pin-up girl.”¹¹ A few weeks later, the author of a letter to the editor of Newsweek reacted with “absolute disgust” to the book: “Are the authors trying to make a mockery out of the whole medical profession?”¹²

A column in the San Francisco Examiner and Chronicle reported that “sex has reared its head in the medical profession and the subsequent feminist uproar can be heard in the nation’s medical schools across the land.” Time commented that “few books prompt less public debate than medical texts. But there are exceptions to that rule . . . the resulting volume is closer to Playboy than to Gray’s Anatomy.”¹⁴

Scholarly reviewers varied in their responses. The Lancet commented that the illustrations “depict very attractive, shapely, young female models: this produces a rather distorted picture of what an average human body is like . . . in some of the photographs, the nudes adapt poses the value of which is more aesthetic than educative, as in the coastal scene of a naked woman kneeling in the sea, the ebbing flow of water throwing a splash that discretely obscures her external genitalia.”¹⁵

Dr. L.S. King, writing in JAMA, made the obscure comment that “perhaps as a concession to women’s lib, the photographs illustrating surface anatomy used comely female models.” In a generally negative review by David Sinclair in the Journal of Anatomy, the illustrations are dismissed by the statement that “the surface anatomy photographs are mainly of female subjects—a somewhat dubious sacrifice of anatomical detail to meet the supposed preoccupation of the male student with sex.”

Was It a Pornographic Anatomy Book?
The public display of images of nude adults engenders a wide range of reactions in the viewer. Visitors to museums and readers of art history textbooks admiringly view and carefully study paintings and sculptures such as Michelangelo’s David or Botticelli’s The Birth of Venus. Our reaction to an image is related to the image itself, our mood, our understanding of the artist’s intent, and where and how the image is displayed. Critics of The Anatomical Basis of Medical Practice linked the Gowlands’ photographs with Playboy, pin-up girls, a preoccupation with sex, leering, and tastelessness.¹³–¹⁴ The pictures said they were educative, artistic, or lovely.¹³ More than 35 years after the publication of The Anatomical Basis of Medical Practice, Dr. Wilson still feels that the controversial pictures were appropriate, although he regrets that the controversy surrounding them doomed the book (J.S.W. Wilson, personal correspondence, July 17, 2008).

It has been notoriously difficult for legislators and judges to draw the line between pornography and art or between protected free speech and unlawful images or language. In 1957, the U.S. Supreme Court defined obscenity as material whose “dominant theme taken as a whole appeals to prurient interest” to the “average person, applying contemporary community standards.” In 1964 the court tried to define “community standards.” Among the most famous quips on the problem was found in the 1964 U.S. Supreme Court case of Jacobellis v. Ohio, in which Associate Justice Potter Stewart wrote, in drawing the line between free speech and the government’s power to restrict pornography, that “I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description [of hard core pornography] and perhaps I could never succeed in intelligibly doing so. But I know it when I see it.” By 1966, the court had allowed the banning of material that was “potentially offensive” and “utterly without redeeming social value.”

In 1973, the U.S. Supreme Court developed what was widely referred to as the threefold test to establish that a publication, photograph, or film could be banned as obscene: (1) the average person, applying contemporary community standards, must find that the work, taken as a whole, appeals to prurient interest, (2) the work depicts or describes, in an offensive way, sexual conduct or excretory functions defined by applicable state law, and (3) the work, taken as a whole, lacks serious literary, artistic, political, or scientific value. The authors and publishers of The Anatomical Basis of Medical Practice, in contrast to a large segment of the medical public, had distinctly different views of what the Gowlands’ pictures represented. Becker et al thought they were witty, engaging, and funny. But, by 1971, many viewed the text and photographs as outdated pornographic depictions of women.

The Boycott
A sharp reaction came from Dr. Estelle Raimey, professor of physiology and biophysics at Georgetown University School of Medicine and president-elect of the Association of Women in Science (AWIS). Raimey, referred to by her colleagues as “La Belle Estelle,” was well known for her research in endocrinology, her wit, and a dedication to women’s rights. She wrote the 1971 cover article for the first issue of Gloria Steinem’s new feminist magazine, Ms. When Raimey died at 89 years of age in 2006, she was eulogized by Steinem, Supreme Court Justice Ruth Bader Ginsburg, and Senator Hillary Clinton.

Raimey denounced Becker, Wilson, and Gehweiler’s book as “an obscene denigration of women and indeed of the men practicing medicine.” In a letter to the AWIS membership, Raimey described the book as “obviously intended to make a lot of money by engineering up a rather dull subject with the fun and games of prurient photographs of leering naked women in seductive poses. The authors smirked and preened themselves throughout the book. At every opportunity they used coy undulating nymphs to illustrate anatomical landmarks such as the left big toe.” Raimey called for a boycott of the book and demanded a meeting with the publishing company, Williams &Wilkins.

Within a few months, the publisher knew it was in trouble. Ruth Finnegan had been promoted to anatomy editor at Williams and Wilkins at the time of the book’s publication. She recalled that “some schools ordered the book for full classes, but the teachers were furious and many copies were returned to the bookstores.” An anatomy professor told her that the book “stayed in his office because he had a 13-year-old daughter...
and his wife would not allow the book in their house.” At a 1972 professional meeting of anatomists, “teachers just stormed our booth with uniformly negative comments about the book and pretty negative comments about our company for having published it” (S. Finnegan, personal correspondence, December 16, 2006).

Williams & Wilkins issued a four-page erratum correction after the book was on the market. They advised readers:

Publication of The Anatomical Basis of Medical Practice has generated widespread and lively interest both in the text itself and in concepts of teaching anatomy today. Because of its novel approach, the text has received close attention from both teachers and students.

It has been met with criticism by some readers about the propriety of female nudes—with no counterbalance from male nudes—to identify certain anatomical features. The purposely light and sometimes humorous style used by the authors has also caused comment. A further complaint has been the omission or sketchy treatment of some subjects. These points are valid, and respected by both the authors and publisher.

Raimey claimed that Williams & Wilkins agreed to stop all advertising, promotion, and sales of the book to have the book off the market within a few months of its publication. “In other words, this book is dead.” The story, however, is more complicated. Individuals began to write letters to Williams & Wilkins protesting the book’s content. Nonetheless, at least one advertising campaign made full use of the new illustrations, which were displayed prominently at the convention of the Federation of American Societies for Experimental Biology. Raimey threatened to organize a nationwide boycott of all Williams & Wilkins books. She ultimately met with Charles Reville, who had been promoted to president of Williams & Wilkins.

In a later interview, Reville said that Raimey’s claim that Williams & Wilkins pulled the book off bookshelves was not true. Although he acknowledged that a meeting took place, he said that advertising was stopped because the book was not selling well. Reville, who had helped convince his colleagues at Williams & Wilkins to publish the book, reported that the book sold out by December 1972 and was not withdrawn under pressure. Reville said that “because the book has not been a roaring success, this edition is not reprinted” and that Raimey’s report on the incident was “sniggering and inaccurate.” In this version of the story, the publisher simply allowed the first edition to be sold out and issued no reprints or further editions. Ms. Finnegan similarly recalls that the first printing did not sell out and that the remaining warehouse stock was destroyed (S. Finnegan, personal correspondence, December 16, 2006).

Becker groused that Raimey sat “with 25 free women lawyers waiting for us to take her on…. She has hundreds of kooky dames writing letters to us and everyone else they feel they can influence.” Becker told Alice Gowland that the publicity would almost certainly increase sales of the book. He laid blame on Williams & Wilkins, saying that

We, as authors, were quite upset by the way the company grouped these photographs, reduced them in size, and darkened many of them. They lost a lot of anatomical detail in the process and, by grouping, only called attention to the nudity. It is quite obvious that Raimey and others have never read the text but merely flipped to the pages where most of the figures are grouped. They represent only 18 illustrations out of a total of 1,200 in the book.

Estelle Raimey wrote to the members of the AWIS and crowed about her success. The publishing industry had now learned that

The consequences of putting Playboy into textbooks far outweigh the possible money-making properties of such ventures. As an association of women scientists with membership approaching one thousand researchers, teachers, and practitioners, we have combined clout to make our presence felt and respected … keep the faith and pay your dues and our strength shall be as the strength of ten.

The Authors Fight Back

Wilson answered his critics in an open letter in Health Rights News. Responding to a female critic whom he addressed as “Dear Miss, Mrs., or whatever you may be,” Wilson wrote that “you masquerade yourself behind anonymity … and you address me as a Mr. when in fact I have earned two doctorate degrees in order to hold a faculty position to teach at an institution. … it is patently obvious from your letter that you have not read the introduction … before grabbing at very immature decisions concerning your emotions.”

Becker repeatedly criticized Williams & Wilkins. He claimed that he had wanted to use full-page enlargements but that the publisher had changed the format of the illustrations. He berated the publisher for misspelling, labels in the wrong places on some figures, and (they) even transposed some figure legends! This all came about because of the materialistic competition between publishing houses to get a book on the market which will out sell all others and to get it there in time for the fall market. As a result we now feel like sacrificial goats who slaved to produce a good, novel, useful teaching text—one that had the student in mind, not the acclaim of our high brow colleagues—only to find opprobrium heaped upon us from a number of sources.

In a response to another critic, Becker commented that

If I had to venture a guess as to your choice of a subspeciality, I would probably say you were oriented towards psychiatry. Your negativity in your letter does not take into account that it took us almost 4 ½ years of our lives, investing practically every spare moment we had available to put together a new, different, interesting anatomy book that might appeal to students. I am truly sorry that you feel we have degraded womanhood and used photographs disrespectfully. But remember one thing, it was women who posed for these pictures and were paid a professional fee by a professional photographer in California. … With all due respect to you, I recommend that you fortify your mind with some facts and learn to read. Secondly, I recommend that you learn not to run your brain in low gear while your mouth is in overdrive.

The Rare Book Market

The Anatomical Basis of Medical Practice is now a minor collector’s item. Recently, an informal survey was conducted of used and rare medical book dealers concerning the book. Many have copies in stock. One dealer wrote that one of the copies in his inventory “has a paper clipped indentation at every page with a nude [female] photo” (S. Porter, personal correspondence, July 3, 2006). On the Internet, copies of the book are priced between $89.00 and $300.00.
The Era

The Anatomical Basis of Medical Practice appeared as the women’s movement became part of American popular consciousness. After the publication of Betty Friedan’s The Feminine Mystique in 1963, Kate Millett’s Sexual Politics in 1970, Germaine Greer’s The Female Eunuch in 1971, and Gloria Steinem’s works, Becker et al’s attitude towards women and the female body ran headlong into the changing attitudes. Americans in the 1960s and 1970s began to reconsider their views concerning beauty and gender. There was an increasing appreciation of the beauty of bodies other than those of youthful athletes and professional models. People of various ages, weights, and races were portrayed in advertisements, in popular films, and on magazine covers. Changing societal attitudes had an impact on what physicians perceived to be normal and abnormal in human morphology.

Conclusion

The conflict over the publication and quick demise of The Anatomical Basis of Medical Practice illustrates evolving attitudes of the 1960s and 1970s concerning what was and was not pornography, the role of the female form in anatomical instruction of medical students, and changing attitudes of acceptable behavior on the part of the anatomy faculty. The book’s short life was the result of containing material that would, at one time, have been acceptable. By 1971, however, the book was now in the wrong place at the wrong time—academic male chauvinism had run headlong into a growing number of female physicians and scientists, evolving societal views regarding feminism, and a sea change in views concerning the portrayal of the human body.

Acknowledgments

Emily J. Glenn and Suzanne Porter of the Duke University Medical Center Archives and Library kindly provided research assistance. Diane Magrane critically reviewed a draft manuscript. This project was supported by a grant from The Josiah Charles Trent Memorial Foundation, Inc.

References

7 Gowland A. Unpublished letter to Frederick Becker. 10/17/72c. Private holdings of A. Gowland.
8 Gowland A. Open letter to Dr. Estelle Raimey. Probably 10/72d. Private holdings of A. Gowland.