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# Ethics and access to teaching materials in the medical library: the case of the Pernkopf atlas\*

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Conflicts can occur between the principle of freedom of information treasured by librarians and ethical standards of scientific research involving the propriety of using data derived from immoral or dishonorable experimentation. A prime example of this conflict was brought to the attention of the medical and library communities in 1995 when articles claiming that the subjects of the illustrations in the classic anatomy atlas, Eduard Pernkopf's *Topographische Anatomie des Menschen*, were victims of the Nazi holocaust. While few have disputed the accuracy, artistic, or educational value of the Pernkopf atlas, some have argued that the use of such subjects violates standards of medical ethics involving inhuman and degrading treatment of subjects or disrespect of a human corpse. Efforts were made to remove the book from medical libraries. In this article, the history of the Pernkopf atlas and the controversy surrounding it are reviewed. The results of a survey of academic medical libraries concerning their treatment of the Pernkopf atlas are reported, and the ethical implications of these issues as they affect the responsibilities of librarians is discussed.

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## INTRODUCTION

The issues raised for medical librarians by the Pernkopf atlas bring to the fore the conflict between censorship, long held by librarians to be unethical, and the need to uphold the ethical standards of the medical and scientific communities in the handling of scientific data and material that may be tainted by its unethical origins. In this case, the ethical questions concern the origin of the cadavers used for the dissections from which its anatomical illustrations are drawn.

## BACKGROUND TO THE PERNKOPF ANATOMY CONTROVERSY

To begin to understand the ethical dilemma of the Pernkopf atlas, one must first consider the background of the physician whose work the atlas was. The life of Eduard Pernkopf was recounted by Williams [1]. Pernkopf was born on November 24, 1888, in a small vil-

lage in Lower Austria. He enrolled in the Vienna Medical School in 1907, where he was active in a nationalistic German student fraternity. Pernkopf received his medical degree in 1912, served as a physician in the army for one year during World War I, and taught anatomy at various schools throughout Austria.

While in medical school Pernkopf attracted the attention of the director of the Anatomy Institute of Vienna, then the most important such center. He became assistant director in 1920, associate professor of anatomy at the University of Vienna in 1926, professor in 1928, and director of the Anatomy Institute in April 1933. Pernkopf also joined the National Socialist German Workers', or Nazi, Party in 1933. He joined the Storm Troopers, or Brown Shirts, a year later. He was an active and fervent party member. One month after Nazi Germany invaded Austria in 1938, Pernkopf was made dean of the medical faculty in Vienna. From 1943 to 1945, he was rektor magnificus (president) of the University of Vienna.

At the time that Pernkopf was appointed dean of the medical faculty of the University of Vienna, the *Wiener Klinische Wochenschrift* was the official publication of the Viennese Society of Doctors. Pernkopf's name appeared on the masthead of that journal for the first time in the May 20, 1938, issue, just several weeks after annexation, when the supporting organization,

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the Vienna Society of Doctors, was dissolved by the Nazis [2]. Prior to that issue the cover said that the journal was "Published by members of the medical faculty in Vienna." The masthead then announced that the journal was "published by members of the medical faculty in Vienna as represented by Professor Dr. E. Pernkopf, dean." So, within a month of Hitler's invasion of Austria, Pernkopf was on top of his faculty, their journal, and the Nazi Party hierarchy.

Pernkopf's first issue included his plans for his journal. He and his new editors began by swearing undying allegiance to the new Reich and promising that the journal would serve the fatherland [3]. That issue also included Pernkopf's first official speech as dean to the faculty and students, entitled "National Socialism and Science," delivered on April 4, 1938. He said that the idea of National Socialism must permeate education and science and that freedom in the liberal sense leads to chaos, which could not be permitted in science [4]. He told the faculty and students that the only useful goal of art and science was service to the nation, that National Socialism was devoted to the practical solution of problems, and that the critical issues that anatomy and embryology could address were constitution and race. The dean promised that all disciplines in the medical faculty would work on the problem of race. The curriculum would change to include race physiology, race psychology, and race pathology [5].

Pernkopf summarized the role of medicine in the new state as being both positive and negative, that is, both "furthering the propagation of the fit" and "eliminating the unfit and defective" by controlling marriage, by forbidding "breeding by individuals who do not belong together properly," and by sterilizing the genetically inferior.

Another of Pernkopf's first acts as dean of the faculty was to enforce the Nazi order to cleanse the University of Vienna of Jews and other unwanted individuals. All professors were required to swear an oath of loyalty to Hitler, but only politically desirable persons or those entitled to do so under the Nuremberg Race Laws were allowed to take the oath [6]. Within weeks, the university had removed all Jews and other opponents of Nazism; 153 of the 197 members of the faculty of medicine were dismissed.

At the end of World War II, Pernkopf was not charged with war crimes. He was, however, held in an Allied prison camp near Salzburg for three years. He returned to Vienna where his Anatomy Institute had been largely destroyed by Allied bombing. He was stripped of all titles and appointments, but was allowed to continue work on his atlas in the Neurological Institute. Pernkopf died suddenly of a stroke on April 17, 1955.

## THE PERNKOPF ATLAS

So what was this atlas the Nazi anatomist Eduard Pernkopf was involved in? *Pernkopf's Topographical Anatomy of Man* is generally considered by anatomists and surgeons to be a unique classic among anatomy atlases. The *New England Journal of Medicine's* review of the third edition in 1990 praised it as an "outstanding book of great value to anatomists and surgeons" and "in a class of its own [that] will continue to be valued as a reference work even if its prohibitive cost and great detail make it unsuitable for purchase by medical students" [7]. The *JAMA* review called it "a classic among atlases" with illustrations that "are truly works of art" [8]. Its classic status and significant contribution to the health professions remains unchallenged.

It is well known that some of the artists who painted the illustrations for the Pernkopf atlas were themselves active and loyal members of the National Socialist Party in Austria. Erich Lepier, Franze Batke, and Karl Endresser demonstrated their allegiance to Nazi ideology by signing their anatomic paintings with Nazi icons. Lepier often signed his paintings with a swastika (1943 edition, volume 2, Figure 172, tafel 94, opposite page 604). Endresser signed his name with the "SS" symbol (1943 edition, volume 2, Figure 188, tafel 103, opposite page 672), as did Batke (1952 edition, volume 3, Figure 14, tafel 9, opposite page 48).

While the illustrations themselves do not provide any direct evidence concerning the origins of the subjects, small details in some illustrations raised suspicions [9]. The wasted appearance and crudely shaven head of a young man in an illustration of a dissection by Lepier suggested that the subject might have been a wartime prisoner (1952 edition, volume 3, Figure 50, tafel 43, opposite page 97). A Batke illustration (1952 edition, volume 3, Figure 9, tafels 3 and 4, opposite page 44) showed a cadaver with very short hair; cadavers used in anatomy books usually had completely shaved heads. Endresser painted a dissection of the femoral region of a male who appears to have been circumcised (1943 edition, volume 2, Figure 188, tafel 102, opposite page 672). Lepier's painting of an infant with the umbilical cord still attached (1943 edition, volume 2, Figure 6, opposite page 39) led to the questioning of the origins and cause of death of the subjects.†

## THE PERNKOPF ATLAS CONTROVERSY

A 1995 article in the *Annals of Internal Medicine*, recounted the history of the University of Vienna in 1938

† The two-volume, English-language, 1964 edition of the *Pernkopf Anatomy* included the original unaltered signatures, complete with Nazi symbols. The current editions have had the Nazi iconography airbrushed out. The editors, however, missed two.

[10]. It detailed Pernkopf's administrative and political activities and described his professional work on the publication of an anatomic atlas. The atlas was said to contain material from children killed in a Viennese hospital and that Pernkopf's Institute of Anatomy used the corpses of executed persons for teaching purposes.

The piece that really sparked the current controversy about the Pernkopf atlas was a letter to the editor of *JAMA* in November 1996 signed by a professor of dental surgery from Columbia University and a professor of family and community medicine from the University of Toronto [11]. They specifically noted that some of the pictures contained expressions of Nazi sympathies (the swastikas and "SS" letters in the artists signatures). Most pointedly they said that

The precise origins of the cadavers used in Pernkopf's work are unknown, but evidence suggests they may have been victims of political terror. It is known that the Anatomy Institute of the University of Vienna received the cadavers of prisoners executed at the Vienna District Court and of others put to death at Gestapo execution chambers in Linz, Munich, and Prague.

Their letter called the Pernkopf atlas a legacy of the tragic era when abuses of medicine pervaded the entire medical profession.

In March 1995, the Israel Holocaust and Martyrs Remembrance authority, Yad Vashem, asked the rector of the University of Vienna and the publisher of the atlas to make an official investigation to determine who the subjects of the Pernkopf atlas were and how they died; if the subjects were, or could have been, victims of the Nazis, to establish a public commemoration of the victims; and to continue to publish the atlas with an acknowledgment documenting the history of Pernkopf and commemorating the victims [12, 13].

Alfred Ebenbauer, rector of the University of Vienna, wrote to *JAMA* in April 1997 in response to the letter in *JAMA* and the article in the *Annals of Internal Medicine* [14]. The request for an investigation by Vashem may have been included in the "increasing pressure from abroad" that led Ebenbauer to state that "the fullest possible clarification of the state of affairs referred to in these accusations" was required and that therefore "a research project entitled 'The Anatomical Sciences 1938-1945' had been initiated" at the university. The letter indicated that preliminary investigations suggested that, during the Nazi dictatorship, the anatomy department routinely received the corpses of executed persons, among whom reportedly were renowned dissidents; that brain preparations derived from children under the euthanasia program in the Psychiatrisches Krankenhaus Bauingartner Hohe in Vienna (which was never an integral part of the university) were still stored there, but would soon be prop-

erly interred; and that the Universities of Graz and Prague were supplied with corpses of prisoners interned at the Mauthausen concentration camp, but the fate of these corpses was unclear.

The interim report of the Pernkopf Commission of the Faculty Senate of the University of Vienna was published in the *Wiener Klinische Wochenschrift* in December 1997 [15]. The commission stated that there was no doubt that the Viennese school of anatomy used the bodies of Nazi victims for scientific purposes and concluded that it must be assumed with considerable certainty that Pernkopf used these preparations to illustrate his atlas. It was, however, at that time impossible either to prove this conclusively or conclusively identify the subjects and whether they included Jewish victims. Nazi victims of "euthanasia" were known to have been exploited for scientific publication in Vienna, but it was not possible to prove a direct link with the Pernkopf atlas.

Since August 1997, the rector's office of the Vienna University has provided all libraries with an insert titled, "Information for Users of Pernkopf's Atlas." After describing Pernkopf's political history, the insert states that

Currently, it cannot be excluded that certain preparations used for the illustrations in this atlas were obtained from (political) victims of the National Socialist regime. Furthermore, it is unclear whether cadavers were at that time supplied to the Institute of Anatomy at the University of Vienna not only from the Vienna district court but also from concentration camps. Pending the results of the investigation, it is therefore within the individual user's ethical responsibility to decide whether and in which way he wishes to use this book. [16]

The final report of the commission at the University of Vienna was issued October 1, 1998 [17]. The investigation revealed that the Institute of Anatomy received at least

1,377 bodies of executed persons, including 8 victims of Jewish origin. . . . On the basis of a general decree of February 18th, 1939, the bodies of persons executed were assigned to the Department of Anatomy of the nearest university for the purposes of research and teaching. . . . No proof could be found that bodies had been brought to the Vienna Department of Anatomy from the Mauthausen camp complex. . . . The presumption and suspicions that some of the illustrations might be of prisoners of war or Jewish victims are based predominantly on impressions which strike the critical observer. In these cases, however, the investigation was able neither to prove nor to disprove the suspicions. Because of the systematic practice of making specimens anonymous, it seems likely that a final clarification of such suspicions will not now be possible. [18]

## THE OPINIONS

So what do we do with material with this kind of history? Much of the previous debate on the use of Nazi scientific data focused on the hypothermia experiments carried out on concentration camp inmates at Dachau. That debate was rendered moot when analysis revealed the results to be based on experiments with serious errors in experimental design, data collection, and analysis [19]. In 1988, the Environmental Protection Agency ordered that Nazi data on human exposure to phosgene gas be excluded from a study the agency had commissioned [20]. However, the validity of the Pernkopf data has never been challenged, only lauded. It has been called the "archtype of highly reliable data 'tainted' by its association with Nazism" [21].

Many arguments can be raised against the use of material like the Pernkopf atlas. For example, Abraham Foxman, national director of the Anti-Defamation League, said that the research findings of heinous crimes or atrocities should not be used, even if it would do good, because it would retrospectively cleanse the atrocity and possibly justify similar acts in the future [22]. Freedman has thoroughly analyzed many of these issues [23], and Riggs has provided a readable summary of Freedman's reasoning [24].

The current author, Riggs, Greene, and others believe that the active use of the atlas itself is the most fitting tribute to those who died for it. It is ironic retribution for the Jewish cadavers (or whoever died for whatever their beliefs) used to illustrate a Nazi's anatomic atlas to be immortalized by it. Using this atlas allows these cadavers to speak to us from half a century ago. They make us reexamine and again repudiate the Nazi beliefs that created a society that killed them [25, 26].

Howard Spiro, at the Program for Humanities in Medicine at Yale University, says it does not matter where the victims came from—they were all humans, and all were murdered. To him, the Pernkopf pictures serve a double role: they teach anatomy, and they remind us of the horror that any "objective" science can impose. "The brilliant depictions of the Pernkopf atlas are transfiguring; in each, I hear the scream of a person . . . Like the head on the pike warning us where we must not to go [sic], they guard the slippery slope" [27].

Urban & Schwarzenberg, the original Pernkopf publisher, is now a subsidiary of Waverly, Inc. Waverly conducted their own inquiry, speaking to authors and illustrators who worked on the atlas after Pernkopf died in 1956, reading letters from present faculty at the University of Vienna, and talking with a student who attended the medical school during the war [28].

Edward B. Hutton, Jr., as president of Waverly, Inc., was the American publisher of the atlas. In a Novem-

ber 1996 letter to *JAMA*, Hutton said his company continued to publish the Pernkopf atlas because of its scientific merit and because, to date, no concrete evidence had been found to substantiate Pernkopf's use of cadavers originating from Nazi concentration camp victims [29]. Hutton acknowledged that Pernkopf was an avowed Nazi and, that while Hutton and his company renounce Pernkopf's abhorrent views, they "separate Pernkopf, the man, from the work because of the lack of evidence as to the true origin of the cadavers used in the atlas."

Others argue that the publisher's suggestion that the scientific work of the author be considered separately from his beliefs is impossible, that a work cannot be separated from its creator [30]. Still others think that what is created does not change when one learns about the creator. As Riggs has said, "Just as I can in no way condone the beliefs of Pernkopf and his Nazi cronies, neither can I deny the beauty, grace, and precision of the images they produced" [31].

Malcolm Hast, of Northwestern University Medical School, who reviewed the book for *JAMA*, said that as it was one of the most beautiful anatomy books published, the book should continue to be used. He believed that if something was good, it could not be thrown away any more than the knowledge already gained from it could be expurgated from readers' minds [32].

Garrett Riggs, then a medical resident, said that removing Pernkopf's atlas from circulation was an easy solution to a difficult problem and that "removing Pernkopf's atlas from circulation would be to diminish appreciation of the beauty and structure of the human form" [33].

Ernest April, an anatomist at Columbia University's College of Physicians and Surgeons, believed that one could not detract from the fact that the book was phenomenal, complete, thorough, and authoritative despite the knowledge that Pernkopf was not a good person and belonged to the wrong party [34].

Howard Israel, M.D., who was instrumental in bringing this issue to public attention, presented the arguments, supported by many, that said if some benefit could be derived from the use of the atlas today, to save a life or enable a surgeon to perform more skillfully, its use would honor those who suffered and sacrificed their lives [35]. Such an argument might also maintain that not using "tainted knowledge" when it might help make better medical decisions might be equally unethical. Israel noted that there was no indication to the unsuspecting user that the book had any link to Nazi medicine, and he viewed suppression of the work as inappropriate and reminiscent of the book burnings that took place in Nazi Germany. In the end, all potential users of the Pernkopf atlas must make their own personal decisions as to how to deal

with information and data obtained from Nazi medicine.

Questions about the fate of the individual works of each of Pernkopf's Nazi artists have been raised. The work of some of the artists, including Erich Lepier and Karl Endtresser, who worked with Pernkopf, also appeared in other texts, including the most recent editions of *Sobotta's Anatomy* (Williams & Wilkins, 1997). Must then each individual piece of their work be repudiated and tracked down and its removal from all currently available publications demanded?

It has been suggested that data derived from tainted research should be used, but be tagged as "tainted," and citations in scientific journals should delete the names of the researchers, thus denying them credit, prestige, and future influence [36]. While an admirable idea, this practice would be extremely difficult for libraries and owners of private subscriptions to do. Libraries already have difficulty handling official errata and retractions [37–39].

This author agrees with Spiro that to forbid the publication of the Pernkopf atlas would too much resemble the Nazi book burnings [40]. Spiro does not want the Nazi icons removed, because that would make history untrue. The icons on the pages of Pernkopf's atlas remind doctors of the hell that people much like themselves created. Spiro hopes that such reminders keep physicians from ever again abetting such evil. Not to publish the Pernkopf atlas also infringes on free speech and freedom of the press.

### THE EDITORS' RESPONSIBILITY

The Declaration of Helsinki of 1975 clearly states: "Reports on experimentation not in accordance with the principles laid down in this Declaration should not be accepted for publication" [41]. But the executive editor of the *New England Journal of Medicine* says many editors do not invoke this principle, and many others are not even aware of it [42]. Many are reluctant to reject work they believe is unethical as long as the violations are not excessive or flagrant. They are reluctant to accept responsibility for evaluating the ethics of a study, assuming that evaluation was done at the institution where the work was done. Because these editors are aware of the importance of publication, they become reluctant to reject work on such "soft" grounds as questionable ethics. Editors are also influenced by the importance of the results; a study that has great practical significance is difficult to reject. Editors and reviewers have been more willing to forgive ethical lapses than to forgive scientific lapses.

The International Committee of Medical Journal Editors, also known as the Vancouver group, was formed in 1979. The group has become increasingly influential over the years in developing common policies for the more than 500 journals that currently adhere to their

standards. In 1997, the group revised its standards on ethics in clinical research to include a statement on the protection of patient rights to privacy without informed consent [43].

All individuals involved in the research process at each step along the way have the obligation to evaluate the ethical content of the work, just as they evaluate the scientific content. This group includes the investigators, institutional review boards, funding agencies, reviewers, and editors. "Editors are one more link in the chain guarding against unethical research" [44].

### THE LIBRARIES' RESPONSIBILITY

Must librarians then also provide additional links in this chain? In August 1996, the Library Advisory Committee of the National Institutes of Health (NIH) Library voted to remove the Pernkopf text from the stacks and place all editions on open reserve [45]. Their consensus was that to "withdraw this book from circulation would do a disservice to the NIH and suppress the memory of possible victims of execution." To mark the book with an acknowledgment of the controversy would set a precedent for subjective judgment of any book. "The general practice in libraries has been to remove controversial publications from the general circulation, but to continue to maintain availability of these items." That was what they did with the *Pernkopf Anatomy*.

A physician at St. Barnabus Medical Center in Livingston, New Jersey, Richard Panush, M.D., read the article in *Annals of Internal Medicine* and found the book in his medical center's library [46]. The institution decided to "expunge it from our collection and retain it in a symbolic manner, to remember those events in those times and their lessons." Panush went so far as to resign from the editorial responsibilities he had with Williams & Wilkins and cancel his subscriptions to their journals, because they continued to publish Pernkopf.

In Great Britain, the Royal College of Surgeons confirmed that it had a copy of the book but would not comment on whether it would be removed as a result of an inquiry. A librarian at King's College School of Medicine and Dentistry said, "The only reason we have the book is because we were given it by a German student in the 1960s. It is being withdrawn into our special collection" [47].

The 125 libraries associated with the members of the American Association of Medical Colleges were surveyed; sixty responded. Almost all responding institutions held at least one edition of the Pernkopf atlas. Of the respondents, five libraries had been questioned about the atlas by faculty, students, or library users. In nine libraries, library faculty and staff brought up the issue. Only one library withdrew the book. Several moved it to their special or historical collections, most-

ly because they now feared theft or mutilation of the volumes.

The American Library Association's Library Bill of Rights states that "[m]aterials should not be excluded because of the origin, background, or views of those contributing to their creation" [48]. The Medical Library Association adopted a "Code of Ethics for Health Sciences Librarianship" in 1994 [49]. It includes the statement that health sciences librarianship "creates and maintains conditions of freedom of inquiry, thought, and expression that facilitate informed health care decisions." Thus, most medical school libraries did act in accordance with this statement in not withdrawing this controversial title.

The Association of College and Research Libraries adopted and approved a statement on "Intellectual Freedom Principles for Academic Libraries" in June 1999 [50]. This document states that preservation and replacement efforts should ensure that balance in library materials is maintained and that controversial materials are not removed from the collections through theft, loss, mutilation, or normal wear and tear. Those libraries that chose to move their copies of the Pernkopf atlas to the special collections portions of their libraries acted in accord with this principle.

A library collection development policy is a statement about how a library carries out its mission through the acquisition of information resources for its users. It should include sentiments expressed by the Medical Library Association's "Code of Ethics for Health Sciences Librarianship" and the Association of College and Research Library's "Intellectual Freedom Principles, for Academic Libraries." An established collection development policy is the most important tool a library has for handling challenges to the inclusion of controversial items in its collection. Despite this library school axiom, most American medical school libraries have not established a standard for the selection and treatment of controversial materials in their collections. The survey revealed that, while 93% of the responding libraries (54 of 60) have a written collection development policy, only 6% (4 of 60) included a statement in that policy concerning how to deal with controversial materials.

Survey results also revealed, however, that challenges to materials in medical libraries were very rare and that when they did arise, they were usually settled by "patron education," in other words, a calm discussion of the library's role and position. This fact, however, does not negate the need for and utility of such a document.

The most important aspect of such a policy is its very existence [51]. Such statements let library users know that their libraries do not endorse the materials they collect. Librarians know that some materials in their libraries contain known untruths and that other

materials will be universally acknowledged to be incorrect over time.

Collection development policies on the handling of controversial materials should not permit restricted access as a means of censorship. Librarians have a long history of self-censorship, wherein they try to preempt trouble by not purchasing or controlling access to items that have the potential for causing controversy [52]. People are often too embarrassed or intimidated to ask a librarian for items that are not readily available. So, by restricting access librarians are, in effect, preventing their distribution or censoring their use. However, librarians also recognize that there may be "countervailing factors to establish policies to protect library materials—specifically, for reasons of physical preservation including protection from theft or mutilation" [53].

## CONCLUSION

A core tenet of medical librarianship is freedom of access to information. It is considered unethical for libraries and librarians to act as censors, even when the material is controversial. This sentiment is captured by The American Library Association's Library Bill of Rights, which states that "[m]aterials should not be excluded because of the origin, background, or views of those contributing to their creation" and "[m]aterials should not be proscribed or removed because of partisan or doctrinal disapproval" [54]. It was on this basis that medical libraries across the United States retain their copies of the Pernkopf atlas. There is no prohibition, however, to librarians adding statements that alert the reader to controversial or erroneous material. Adding such statements directly to material in public library holdings is ethical and especially important when works may contain material that may have violated the ethical standards of the medical community. Many librarians have inserted the University of Vienna's statement in their copies of the *Pernkopf Anatomy*. Others have added notes or electronic links to the Pernkopf record in their electronic card catalogs directing users to more information about the controversy, and others have prepared folders with copies of the articles on the topic that are shelved with the atlas.

This is the proper ethical response of a library to the conflict between intellectual freedom and the violation of medical ethics, to let all potential users of a controversial piece of information know its background. Our job is not to judge but to inform, to let users know what we know about a given item in our collection. Our duty is to ensure that when we are aware that the data in an article or a book has been derived through unethical experimentation, that patients have been denied informed consent, or that data has been deliberately falsified, that all potential users of the data are

aware of its origins. References to citations of claims of ethical impropriety should be handled like retractions and errata and inserted into journals and added to literature searches. All librarians, and medical librarians in particular, need to develop a consistent and uniformly applied system for dealing with this problem. We need to heighten our awareness of the ethical issues involved in the medical literature we acquire and provide access to. We must be prepared to call attention to those pieces of scientific information that do not meet the highest ethical standards. Our goal as medical librarians is to provide access to the best medical information possible, so our duty is to spend the time and effort necessary to inform our users of the ethical quality of the information they are using.

## EPILOGUE

Gerald Weissman was one of the first people to call attention to the tarnished background of Eduard Pernkopf and the possibly tainted origins of the specimens used for his anatomical atlas. He now calls the text "by no means unique or extraordinary" [55]. Others also claim that the work is no longer unique, that adequate substitutes do exist. The Visible Human Project at the U.S. National Library of Medicine is cited as fast making all of the old anatomy texts obsolete [56]. The aim of that project is to build a digital image library of volumetric data representing completely a healthy male and a healthy female.

But even that project is not without its controversies. The American Association of Clinical Anatomists has reaffirmed the importance of exposure to the human cadaver and dissection in medical education as opposed to experience with a virtual cadaver that is "anonymous and, most importantly, is not human" [57]. There is also an ethical controversy. The person who became the Visible Human male was Joseph Paul Jernigan [58]. Jernigan was a convicted murderer. On July 3, 1981, he stabbed and shotgunned to death a seventy-five-year-old man, who surprised him during a robbery. He was executed on August 5, 1993. He had willed his body to the Texas Anatomy Board, but almost certainly did not know he was a candidate for the Visible Human Project at the time of his death. Only after the body had been selected did the committee who chose the body realize that they had selected an executed prisoner convicted of murder [59]. This raises the issue of proper informed consent. The committee decided that because the man had freely donated his corpse to medical research, there were no ethical barriers to it becoming part of the project.

But more importantly the use of this particular cadaver raises the question of whether the project glamorizes a convicted murderer, making him appear more sympathetic and allowing him to perform a service to

society through no effort of his own. The Visible Human Male is, after all, a rather heroic, perhaps even a noble, figure. Neither the National Library of Medicine nor the Colorado team identified Jernigan as the Visible Human male. However, his date and cause of death, as well as his state of origin were public information. His identity has been widely known and reported [60].

The announcement that the subject was an executed prisoner brought an interesting response from, of all places, the University of Vienna, specifically a group from the Department of Emergency Medicine [61]. These doctors maintained that the death penalty and medical participation in an execution were unethical and that informed consent by the executed person did not dispel the unethical basis of the material used in this project. They called for the immediate withdrawal of the pictures as morally necessary.

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