

Frank H Netter, Medicine's Michelangelo: An Editorial Perspective

Rita M Washko

This year marks the centennial of the birth of Frank H Netter, best known in the medical world for his aesthetic, lifelike medical illustrations. Much has been written about Netter's artistic elegance, particularly the way he imparted emotion and human qualities to his subjects. That and the deft structural precision of his paintings have led to his description as "the greatest medical illustrator of the 20th century" and "medicine's Michelangelo".¹

But what about the role played by editors? How was his art combined with text, and who facilitated this behind-the-scenes process? This article focuses on the editorial process involved in bringing Netter's pictures and their stories to print.

The information for this article and for the accompanying sidebar was obtained from literature searches and from interviews of those who worked with, for, and in tandem with Netter: Gina Dingle, a retired Ciba Pharmaceutical Company employee who as managing editor of *The Netter Collection of Medical Illustrations* had a 15-year professional relationship with Netter; John Craig, an ophthalmologist and medical illustrator who went to work for Ciba in 1972; David J Mascaro, a now-retired professor of medical illustration who worked with Netter on one of the volumes of *The Netter Collection of Medical Illustrations*; Carlos G Machado, a Brazilian commercial artist and former cardiologist who was selected by Ciba to carry on the

RITA M WASHKO has a dual appointment as staff physician at Arizona State University's Campus Health Service and as the medical resource for the university's research scientists working in the animal and biohazards laboratories. In addition, she is a graduate student at the ASU Cronkite School for Journalism. She prepared this story while an intern at Science Editor.

Netter style of painting; and Craig A Luce, a painter and medical illustrator hired by Netter in his later years to paint some of Netter's sketches.

Netter and His Work

Netter trained as an artist at the National Academy of Design and the Art Students' League in New York City and then worked for several years in the 1920s as a commercial artist.¹ His friends were some of the best-known artists of the time—Norman Rockwell and Maxfield Parrish—and his clients also were highly regarded, including *The Saturday Evening Post* and the *New York Times*. But in the late 1920s, in deference to his mother's wishes, he enrolled in medical school at the New York University School of Medicine. Netter financed his education by doing illustrations for his professors' books and articles. On completing his surgical residency in 1933, he went to work as a surgeon in private practice.¹⁻³ He continued to work on medical illustrations, but now for the Swiss pharmaceutical company Ciba (which later became Ciba-Geigy and then, in 1996, Novartis).⁴

Ciba had developed a new formulation of the heart drug digitalis and needed the assistance of a medical illustrator to market it to the physician community. Netter got the assignment. His depiction of a human heart turned out to be so popular that Ciba received numerous requests for the picture from physicians.⁵ It was 1936, the beginning of a life-long partnership with the company.^{1,4-5} Netter laid down his scalpel and returned to his first love, art.

Through his art, Netter created much more than simple pictures of the architecture of the human body—he showed scenes of intertwined images and clues, all knitted together to tell a story. And it was a story told with emotion. From the panicked expression of a woman in the throes of an asthma attack to the look of impending doom on the face of a middle-aged man

experiencing a heart attack, the visual story pushed viewers to feel *something*.

Netter's artistic work spanned more than a half-century. He died in 1991 at the age of 85.⁶ His legacy lives on in the form of his world-renowned medical illustrations, which include the following:

- *Clinical Symposia* (1948 to present), a quarterly publication of a series of monographs focusing on diagnosis and treatment of a specific medical topic.
- The *Symposia* are still in print although only about 14 titles are offered for sale by Icon Learning Systems, the company that bought publishing rights to the Netter collection from Novartis in July 2000.⁷
- *Atlas of Human Anatomy* (published in 1989 and translated into 11 languages), the work that, according to published reports, Netter considered to be his greatest artistic achievement.^{4,8}
- A 13-volume series illustrating all organ systems of the body titled *The Netter Collection of Medical Illustrations* (first volume published in 1953, last volume published in 1993), known to many in medicine as the "green books".⁹

An Editor's Viewpoint

Netter had been working for Ciba for decades before Dingle joined the company in the 1970s. He was prolific, Dingle collected. In any given year, Netter produced nearly 100 pictures for the company. During his lifetime, he produced upwards of 4000 illustrations. Netter maintained his vigorous production schedule until about a year before his death, Dingle said.

Those who knew Netter agree that he was in charge of his work. Still, the process of bringing all the components together to produce the final product required editorial input. "I edited all his illustrations", Dingle said, and worked on a book from concept to finish. At that time, everything was done in house, and Dingle interacted

Netter continued

with Netter and the production staff at all stages. “In the earlier days, he was more involved with the production”, Dingle said, and would participate in all facets of the process. Later, he was freed up to concentrate on illustrating.

Dingle explained how the green book series was set up. Each volume dealt with an organ system, she said. And for each system, Netter consulted physicians who were experts and thought leaders in their fields. “No one ever said no”, Dingle noted, referring to the experts. The process started with identifying an expert in the field, say, neurology; this expert in turn identified experts in specific subjects—for example, seizure disorders—whom Dingle and Netter could approach. “We then invited some of the people on the list to collaborate with Dr Netter in developing one or more illustrations and prepare the accompanying texts”, Dingle said. They participated in the “genesis” of the art, she added.

When interacting with the experts, Netter became the student, Dingle said. He was very focused, and “his eyes would get this gleam” as he sat and listened to the expert physicians, including heart surgeon Michael DeBakey and Albert Sabin, who is credited with developing the oral polio vaccine. But, Dingle pointed out, Netter focused the same attention “on a young physician in the early stages of his path to fame. Dr Netter put the subject ahead of any personal vanity, since to him the goal was to portray information in a manner that would make it clear to medical students, physicians, and nurses. So he listened attentively to everyone who could impart knowledge.”

Before meeting with the physician experts, Netter researched the topics on his own. Then, he and Dingle met with the experts and, after these sessions, “we did an outline in broad strokes”, Dingle explained. “When we refined the outline, Netter, the physicians, and I got together and decided how to distribute the content over the pictures. We would travel to where [the physician experts] were and meet.” Afterward, Netter made preliminary sketches and gave them to Dingle

Netter’s Complementary Painters and Extenders

As Frank Netter aged, some painters whose style complemented his were hired by Ciba to carry on his work. John Craig was one of them. Craig started working for Ciba in 1972 while a medical resident after the company noticed his paintings at a medical-illustration competition sponsored by the American Medical Association. Ciba planned to have Craig train with Netter; however, that plan never materialized. Rather, the two men worked in parallel for Ciba, each doing his own work.

Later, Craig teamed up with editor Gina Dingle to lead a Ciba-sponsored search to find an additional physician illustrator with a complementary style. They found Carlos Machado, a Brazilian cardiologist who also had worked for a time as a commercial artist. Machado explained that, like Netter, he applied the language of advertising to his medical illustrations—they both used vivid colors.

Those vivid colors sometimes caught the eye of Ciba’s production crew, who then set out to “correct” them, Dingle noted. “When we went to press, the crew tried to take down the colors on Netter’s ‘blue bloater’ and ‘pink puffer’”, she chuckled. (The color of the blue bloater depicts the bluish skin discoloration of a patient with chronic bronchitis; that of the pink puffer shows the pursed-lip puffing and pinkish skin of a patient with emphysema.) They were told that a “color-fix” was not needed.

Whereas Ciba hired complementary painters, Netter himself hired “extenders”, medical illustrators to assist him with his work. One of the extenders was Craig A Luce. Despite Netter’s advanced age, “he worked like a dog. He had a blistering regimen and worked me into the ground”, Luce said. “He would sketch in pencil, and then I would paint his sketches.” All the while, though, Netter maintained editorial control of the work, constantly advising Luce about contrast, color, and other elements of artistic style.

David Mascaro, a now-retired university professor of medical illustration, also worked for Netter briefly. Netter supplied Mascaro with rough sketches, and Mascaro refined them. Their association continued for about 8 months. “Netter was very strict; he wanted things just so”, Mascaro said. Netter was his own critic, and a harsh one at that, he added.

and the contributing physician authors to review. They always reviewed a preliminary sketch before the artwork was made because Netter would sometimes need to modify sketches on the basis of this input, Dingle said. The illustrations contained the key points; the text was complementary and elaborated on specific points. The text was written by the physician experts and provided such information as etiology and prognosis. “I would ask them to write their texts as soon as the sketch was okayed because sometimes the final art might take some time, depending on how busy Dr Netter was”, Dingle said. Authors would have one last look at photographs of assembled art, legends, radiographs, and so on. Each illustration had about 650 words of accompanying text, Dingle said.

Once the first draft was completed, a

manuscript editor did the first editing; Dingle did the second and later editing. From there, the copy went to the consultants for review and then to the compositor. Netter did not speak directly to the people involved in this chain of events; it was Dingle’s job to make it happen.

Dingle describes Netter as very open and willing to engage in lively debate. “His approach to ‘making a picture’, as he called it, was not confrontational but rather involved a spirited discussion of the subject until he had all the facts nailed down that he would later translate into a picture”, she said. “He had broad windows on the world, and everything came in through those windows. And he was always prepared.”

The key to his magic, she said, was his ability to capture emotion. Netter had a unique insight into how a student needed

to see the material to learn about it, she said. And he would draw patients just as they presented in real life in their doctors' offices. If he depicted a patient with a rheumatologic disorder, he did so in a way that realistically showed how a patient with that problem stood, got up from a chair, and held his or her body.

Despite his prominence in the field, Netter preferred to keep a very private circle of close friends, Dingle noted. He could have been perpetually on the social circuit; "he could have been a media superstar", given his status as the world's pre-eminent medical illustrator. But he was a private person. "He never sought the limelight; it sought him", she concluded. 🗨️

References

1. Birmingham FA. Dr Frank H Netter: Michelangelo of medicine. *Saturday Evening Post* 1976 May/June: 62-77.
2. Prial FJ. Frank H Netter, MD, surgeon and master of medical illustration, dies at 85. *New York Times* 1991 September 19:D28.
3. Schmeck HM Jr. Anatomical atlas caps a half-century of medical illustration. *New York Times* 1989 September 19:C3.
4. Frank H Netter, MD. Artist, physician, and influential master of human anatomy. www.graphicwitness.com/netter/bio/netterbio.html. Accessed 8 October 2005.
5. Schwan G. A great body of art. *Palm Beach Post* 1989 November 2:D1.
6. Brockman B. Dr Frank Netter, medicine's 'Michelangelo', dies at 85. *Palm Beach Post* 1991

September 19:1B.

7. ICON Learning Systems: Netter Art. store.netterart.com/aboutus.html. Accessed 8 October 2005.
8. The BioArt of Frank H Netter, MD. www.usip.edu/museum/netter.shtml. Accessed 8 October 2005.
9. Interview with Gina Dingle, 22 June 2005.

Publish Your Editorial Research in *Science Editor*

Science Editor welcomes submissions to its Articles section, which contains peer-reviewed reports of research on editorial topics. For further information, please contact Barbara Gastel, editor, at (979) 845-6887 or b-gastel@tamu.edu.