THE role played by the American anesthesiologist Dr. Jean Henley in the growth of modern anesthesia in Germany is virtually unknown in the United States and in Germany.1–3 Yet there is evidence that she played a significant role in the development of German anesthesia as an independent medical specialty in the years following the Second World War.

Dr. Henley’s Early Life in the United States

Jean Emily Henley (1910–1994) was the only child of Eugene and Esther Heller, who emigrated to the United States from Germany and Hungary, respectively.‡ Their native language was German, which probably explains their daughter’s fluency in that language. While Jean was still a child, her father changed the family name to Henley. She was born and educated in Chicago, Illinois, and in September 1929 she entered Vassar College, in Poughkeepsie, New York. She left the following March to study sculpture for 3 years in Paris, France (personal communication, Marilyn Kritchman, M.D., Retired, College of Physicians and Surgeons, Columbia University, New York, New York) and then completed her undergraduate studies at Barnard College, Manhattan, New York.§ Remaining in New York City, New York, she obtained her medical degree from the College of Physicians and Surgeons, New York, New York, in 1940. After an internship in California (fig. 1), she trained in Internal Medicine at the Peter Bent Brigham Hospital, Harvard Medical School, Boston, Massachusetts, from 1942 to 1944. Immediately after completing her training, she volunteered for and was accepted by the United States Army Medical Corps, practicing Internal Medicine in the military in the U.S. mainland and in Korea for the next 26 months.‡ On March 1, 1947, she returned to civilian practice, entering the anesthesiology residency training program at Columbia Presbyterian Hospital, New York, New York. By the time she graduated from the program in 1949, Prof. Emanuel Papper, Professor Emeritus and Former Dean, University of Miami Medical School, Miami, Florida, had taken over leadership of the department from Prof. Virginia Apgar, Professor of Anesthesia, College of Physicians and Surgeons, Columbia University, Manhattan, New York. Prof. Papper invited Dr. Henley to become Chief of Anesthesia at the Francis Delafield Hospital, which was the cancer hospital attached to Columbia. However, instead of accepting this, she decided to travel to Switzerland, and from there to Germany.

A description of what followed next is found in the text of a talk that Dr. Henley gave 30 years later, at the Seventh World Congress of Anesthesiologists in Hamburg, Germany, in 1980.§ She had been invited to speak by Dr. Rudolf Frey, Professor of Anesthesia, University of Mainz, Mainz, Germany, one of the leading anesthesiologists in Germany at that time (fig. 2).

Dr. Henley stated that her visit to Germany in 1949 had begun quite by chance and was entirely unofficial. She had been invited by Dr. Maria Daelen, from the Public Health Department of Hessen, Wiesbaden, Germany, whom she had met during a visit by Dr. Daelen to New York. When Maria Daelen heard that Jean Henley was planning a trip to Europe in the spring of 1949, she asked her to come to Germany for a few days, saying that anesthesia had not progressed as in other countries during the war because of governmental interruption of contact with the outside world. This invitation set the stage for Jean Henley’s subsequent activities.

The State of German Anesthesia after the Second World War

Compared to the United States and the United Kingdom, the practice of clinical anesthesia in Germany before the middle of the twentieth century was relatively undeveloped. This was at least in part due to the active opposition of German surgeons to anesthesia as an independent specialty.

Wolfgang Schwarz, Anesthesia Department, University of Erlangen, Nuremberg, Germany, described the situation in a paper presented at the Second International Symposium on the History of Anaesthesia in 1987.1
Although there had been attempts before the Second World War to found a German anesthesia society, these were unsuccessful. Moreover, specialist training in anesthesia was essentially nonexistent. A few surgeons with a particular interest in anesthesia, such as Dr. Helmut Schmidt, Professor of Surgery at the University of Hamburg-Eppendorf, Hamburg, Germany, had traveled to the United Kingdom and the United States in 1928 and became enthusiastic about the modern methods they saw, but their views had little impact on the attitudes of their colleagues.

In 1983 Dr. Hans Killian, Professor of Surgery, University of Freiburg, Freiburg, Germany, recounted his memories of what he termed the first German anesthesia congress, held in Hamburg in 1928. Dr. Francis McMechan, at that time Editor of Current Researches in Anesthesia and Analgesia and President of the International Anesthesia Research Society, was present. However, although the congress was well attended and well received, it ended unsatisfactorily with no far-reaching resolutions or any further plans to promote the specialty. Dr. Killian tried again to obtain formal recognition for anesthesia as an independent specialty in 1939, but the National Board of Physicians (on the advice of the German Society of Surgery) replied that his plan for the separation of, and specialization in, anesthesia seemed completely impracticable. As late as May 1950, a committee of the German Congress of Surgery stated that there was no necessity for the education of anesthesiologists, but that there was a need for better training of nurse anesthetists. These strictures were based on the widespread belief that the operating surgeon was responsible for all that occurred in the operating room during the surgical procedure and that the anesthetist was only to be permitted the role of an assistant. Specialization was, therefore, on all accounts declined. Hans Killian further described how some surgeons were willing to make an older (surgical) assistant responsible for all of the anesthesia in a particular hospital with the proviso that he or she remained in a subordinate position.

There were some small victories. Prof. Killian described how the death of a young boy with acute appendicitis who had been cared for by an anesthetist with no training and a young surgeon without supervision led him and Prof. George Brandt, Professor of Surgery, University of Mainz, Germany, to persuade Dr. Rudolf Frey, who had previously displayed an interest in modern anesthesia, to accept an appointment as Professor of...
Anesthesiology at the University of Mainz, in 1951, the first position of its kind in Germany.

Dr. Henley confirmed these observations in the report she wrote for the American High Commission for Germany at the end of her stay in Germany. She observed that German surgeons were, at that time, interested in modern anesthesia methods only for particularly difficult cases and for thoracic surgery. She emphasized that this reflected a failure of surgeons to understand the physiological principles on which anesthesia techniques should be based.

In order to understand what seems to us to be a very backward point of view, one must perhaps know something about the medical setup in Germany. When one had lived in hospitals here it is possible to conceive of the development of a dictatorial state. The chief of a service is a little [god]. He is empowered to determine all the activities of his subordinates. ... Not only that, but he keeps for himself the choice operations and it would be a loss of face if he allowed a subordinate to develop techniques which he himself cannot master. If then he does not see the value of the new methods of anaesthesia and considers that the spending of money for apparatus and equipment is unnecessary, the clinic must remain backward in this respect.

She went on to state that this had become a self-perpetuating system, because surgical residents, who, understandably, emulated the attitudes of their chiefs, delivered most of the anesthetics in university hospitals. In an interview she gave to the editor of the *Journal of the New York State Society of Anesthesiologists* on her return to the United States in November 1950, she again described her observations, explaining that the physical setup of the surgical clinics made efficient specialization in anesthesia difficult. In particular, there was a distinct geographic separation of the various surgical specialties, with different surgical specialties performing their procedures simultaneously in the morning in widely separated localities. Thus, cooperation between the surgical specialties was lost, and the economics of a separate but unified anesthesia service became prohibitive.

Support for these views also comes from others. A recent issue of the German journal *Anesthesiology, Intensive Care Medicine, Emergency Medicine, Pain Therapy* contains an interview with Dr. Otto Just, Emeritus Professor of Anesthesia, University of Heidelberg. Heidelberg, Germany, as part of a tribute on the occasion of his eightieth birthday.

Prof. Just was the founder of that journal, later became President of the German Anesthesia Society, and is regarded as an important figure in the development of German anesthesia after the war. He told his interviewers that even as an intern he had the impression that anesthesia was of no significance and that he had felt as though it had been driven out of the healing arts. He also said there was no monitoring of the patient; that is, there was no blood pressure measurement and no observation of the pulse or the respiratory rate.

Dr. Jürgen Wawersik, Professor of Anesthesiology, University of Kiel, Kiel, Germany, related how the Dräger Company of Lübeck, Germany, had in 1925 manufactured an anesthetic machine with CO₂ absorption in a circle system. Despite this, it remained uncommon to administer anesthesia by a machine, and for the most part, Schimmelbusch or similar masks were used to administer open-drop ether or chloroform because it was thought that these methods could be best used by nonmedical personnel.

Jean Henley’s Influence on the Postwar Development of German Anesthesia

Several lines of evidence support the contention that Dr. Henley’s visit had a substantial impact on the subsequent evolution of anesthesia in Germany. Some of this comes from her comments; the rest comes from the remarks of others. Consider her description of what she saw in the operating room of a German university hospital and how she first became involved in the anesthesia there in 1949:

Getting permission to travel to Germany turned out to be an almost insurmountable hurdle. Finally, after several trips to the American Embassy in Bern (Switzerland), I was allowed to take the train to Wiesbaden, where I met Dr. Daellen again. Almost immediately, she sent me to Giessen, where she had made arrangements for me to work with her friend Prof. Bernhard, the Chief of Surgery, for the 10 days of my visa. That I was needed was clear right away. The University Hospital owned two Heidbrinck machines obtained from the American Army. No one understood very well how to use them. Anaesthesia was being administered as it always had been, mostly by a beginning surgical resident intent on learning surgery. He stood throughout the procedure gagging over the ether screen into the wound, disregarding the rest of the patient. When the belly tightened, usually from CO₂ retention, the surgeon would bellow ‘More ether.’ So, instead of improving the airway, the fellow at the head of the table would soak the ether mask even more. ‘The operation was a success but the heart gave out,’ was a not unusual commentary. At the end of this horrendous ordeal, the patient, providing his heart had not ‘given out,’ still deeply anesthetized, was gathered into the arms of a particularly muscular orderly and carried across the room. There he was deposited in bed as though he were a sack of potatoes. Since Germans seemed to prefer sleeping with their heads high, the patient was propped up in that position on bolsters and pillows. There often followed what was called ‘postoperative shock,’ even when little blood had been shed.

She went on to relate how two of the surgical residents who understood what she was driving at when she discussed physiology as it related to anesthesia, volunteered to work with her and try to learn the basics. She spent 4 months in Giessen. She had to get her visa renewed again and again, while accepting invitations to work in a similar way in other hospitals all over the German Federal Republic. She described how she traveled from place to place with a sack on her back, third class, by train. Eventually, the American Military Government (High Commission for Ger-
many) heard about her activities, hired her as a consultant, and gave her the use of a car. She spent from 1 to 6 weeks in Frankfurt, Wiesbaden, Giessen, Marburg, Tübingen, Berlin, Heidenheim, Hamburg, and Heidelberg. She concluded by saying she left Germany with great regret but believed she had contributed to the beginning of something really worthwhile.

The report Dr. Henley prepared for the High Commissioner of the U.S. Zone in Germany is very long, and only significant extracts will be presented here.6 In that report, she made the drastic observation that at the time of her arrival she found that there had been no advance in the methods of administering anesthesia in the past 50 years. She continued that her activities had not been entirely without success. She noted with interest that in several instances (notably in Heidelberg), although little progress could be observed as a result of her teaching as long as she was at the clinic, she later heard that all of her suggestions had ultimately been put into practice. She said that her help had been widely sought after but emphasized that she went nowhere except on invitation by the chief of the (surgical) clinic. She stayed long enough in each place so that she could teach one or two residents sufficiently to carry on or less well without her. She remarked that training that took 2 years in America could not be completed in Germany in 2 or 3 weeks, so that, as she put it, the standards had to be fitted to the possibilities.

She then related that it had often happened that patients under her supervision had died despite the use of the new anesthesia methods. She explained that this had always been attributable to the primitive methods of blood transfusion in use in Germany at that time and the difficulties in obtaining blood. These included the unwillingness of the insurance companies to pay for blood transfusion, how the residents she had trained had to persuade the patients' relatives to donate blood, and how one hospital would not allow a neighboring hospital to have access to its unneeded blood even though the units would soon expire. She described her efforts to teach the use of intravenous fluids in the proper preoperative preparation and postoperative care of surgical patients and how she was able to demonstrate the markedly shorter hospital stays that resulted.

She also commented on the equipment that was available. Mostly, she found portable Heidbrinck machines, which had been purchased inexpensively from U.S. surplus military supplies, and she stated that in most instances they proved satisfactory. In her usual forthright manner, she then related the following controversy: She said that during the period she worked in Germany, the firm of Dräger had developed an anesthesia machine that she found to be very expensive and had, in her opinion, proven, because they enjoyed a monopoly on the production of such instruments in Germany. She made direct contact with the firm but had no success in persuading them to improve it. She said she designed a simple and probably inexpensive machine that one of her pupils had undertaken to get produced elsewhere to bring some competition to bear. When Dräger heard about this, she said they paid a large sum of money to dissuade the other firm from producing her design.††

The report continues with the suggestion that the High Commission should provide funds and support so that young German trainees could broaden their experience in the United States. She added that one doctor was already in Hartford, Connecticut, in Dr. Tovell’s department, and that others were being chosen to follow. This suggests that at least some German physicians were at that time open to the study of anesthesia.

She concluded by saying that she had prepared the groundwork for a film demonstrating the necessity of understanding respiratory physiology to administer good anesthesia. She mentioned that the cost of making the film would be underwritten by German industry. It is not clear whether this film was ever completed.

Evidence concerning her impact can be found from other sources. Frau Vera Joschko, Dr. Frey’s secretary, stated that he and Jean Henley had a lifelong friendship and exchange of experiences and that he considered her as the first teacher of modern inhalation anesthesia in Germany (personal written communication, Frau Vera Joschko, Merzhausen, Germany, Secretary to Prof. Rudolf Frey, July 2001).

In a recently published history of medicine in Giessen, Germany, the life and contributions of the surgeon Dr. Friedrich Bernhard, Professor of Surgery, University of Giessen, Giessen, Germany, are celebrated and Jean Henley is mentioned.7 Dr. Bernhard was a pioneer of modern German thoracic surgery, and the authors describe how his work in surgery led to his being one of the first five German surgeons after the Second World War to be elected to the International College of Surgeons in May 1949. The article continues that to teach his German colleagues the benefits of modern endotracheal anesthesia, methods already established in the United States in the 1930s and 1940s, he employed the American anesthesiologist Jean Henley. Dr. Bernhard realized the enormous benefits of this method and stimulated Jean Henley to write a textbook emphasizing the new technique. Prof. Just, in the interview previously quoted, said:

I came in contact with the American military doctor Jean Henley, who, after the Second World War worked in the American Hospital in Heidelberg and spent her free time in our Clinic. I was fascinated by her professionalism and her routine use of these new methods, and everyone had the impression that the patient was supported during the operation much more securely. Above all, physiologic knowledge was transmitted (to us). The intubation technique had been suggested during the years 1908 to 1912, but its use never became widespread. The reasons for this are well

†† We have found no independent corroboration of this incident.

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known. The surgeons had developed a low pressure chamber, but in daily practice its use was too cumbersome for routine surgery.‡‡ I observed carefully how she passed the endotracheal tube for several weeks. I told the surgeons I could also do that.

Further support for the idea that Jean Henley played a part in the growth of German anesthesia may be deduced from the fact that in September 1981 the German Society for Anaesthesia and Intensive Care bestowed its Honorary Membership on her (fig. 3). In the letter inviting her to attend the ceremony, Dr. Joachim Schara, Director of the Clinic for Anaesthesia, Wuppertal, Germany, President of the German Anaesthesia Society, indicated that the German Society had appointed her as an Honorary Member in due appreciation of her merits in establishing modern anesthesia in Germany after World War II, in the period 1949 to 1951.§§

In her reply, Jean Henley displayed unusual modesty. She thanked him and said that a repeat visit would have enabled her to relive some of the excitement she felt from being there in 1950, working in the Freie Universität in West Berlin. She said the time she spent teaching in Germany held a very special place in her memory. She had the pleasure of doing a constructive job in a surrealistic world and had met wonderful, appreciative, interesting people and thoroughly enjoyed herself. That was the reason she found it hard to understand why she should be specially honored. She finished by saying she did what she wanted to do and if there was benefit, that was all to the good.

Finally, there is her textbook. During her visit, Dr. Bernhard had asked Jean Henley to write a handbook of anesthesia practice, in German. This paper-covered book of 120 pages (fig. 4) was the first modern textbook of anesthesia to be published in Germany after the war; the next book was not published until 1951. The previous two textbooks of anesthesia of any significance published in Germany before this date appeared in 1934. The first was written by the previously mentioned surgeon who was interested in improvements in anesthesia, Dr. Hans Killian. The other was a cooperative effort by a surgeon, a pharmacologist and the Director of Internal Medicine in Leipzig.

The first draft of Dr. Henley's book was written in English in about 6 weeks on the backs of used x-ray film envelopes and translated into German by a colleague, Dr. Gertrud Ungerer-Wiedhopf. Initially, Jean Henley sent the manuscript to the publishers Ferdinand Springer and Co., but they were unwilling to publish it as they supposed that surgeons were more important clientele and they did not want to enter into a potential dispute between surgeons and anesthesiologists (personal communication from the late Dr. Gertrud Ungerer-Wiedhopf to Dr. Goerig, August 2002). It was subsequently published by Walter de Gruyter.

‡‡ Prof. Just is referring here to the use by von Mickulicz and Sauerbruch, and also Brauer, of a sealed chamber with subatmospheric pressure but with the patient breathing spontaneously, to prevent pulmonary collapse during thoracotomy. For a full description of the inventions tried during this era, see Mushin WW, Rendell-Baker L: The Origins of Thoracic Anaesthesia, 1953 (reprinted by Wood Library-Museum of Anesthesiology, Park Ridge, Illinois, 1991).

§§ Interchange of letters dated May to October, 1981, between Dr. Henley and Dr. J. Schara, Wuppertal, Germany; copies in authors' possession, courtesy of The German Society of Anaesthesia.
Berlin, and was eventually reprinted 13 times in its original form, selling a total of 15,000 copies, the last one in 1991, over 40 years after its initial publication. A second edition was never written (personal communication, letter dated December 18, 2001, from Irene Stippa, Assistant, Medicine and Natural Sciences, Walter de Gruyter, Publisher, Berlin, Germany).

Dr. Henley’s book emphasized aspects of American anesthesia that were hardly in use in Germany in 1950. These included tracheal intubation, controlled ventilation, the use of nondepolarizing muscle relaxants, proper intra- and postoperative monitoring, detailed record keeping, and the application of known physiologic and pharmacologic principles.

Inside the back cover of each copy of the book was a detachable anesthesia record. Meticulous intraoperative charting of pharmacologic and physiologic variables was virtually never done in Germany at that time. This chart is so detailed it could easily be used currently. Of particular interest is the back of each chart, which includes an extensive and detailed checklist for preoperative assessment and the postoperative complications of the patient. This is significant because it implies the involvement of an anesthesiologist in the perioperative assessment and care of the surgical patient—unheard of in Germany at that time. The publishers also stated that these records could be bought separately from the book, and in bulk, for routine use for each patient.

Additional Comments

Jean Henley’s role should not be overstated. For example, in Moser’s textbook of anesthesia published in Austria in 1951,1,2 Prof Franz Späth, the Chairman of Surgery at the University Clinic in Graz, Austria, described the visit there by Dr. Stuart Cullen, Chairman of the Division of Anesthesia, University of Iowa, Iowa City, Iowa, from 1937 to 1957 as early as July 1947. He emphasized Dr. Cullen’s demonstration of the use of curare and tracheal intubation for several patients. Therefore, it is not unreasonable to speculate that these modern methods were “in the air” already in Central Europe. Dr. Moser himself received a World Health Organization grant in 1948 supporting a visit to Liverpool, England, to study the techniques used by Gray and Halton for thoracic surgery.

Return to the United States

In January 1951, Jean Henley returned to the United States to assume the position of Director of Anesthesia at the Francis Delafield Hospital in New York. Those who knew and worked with her described her as a very good teacher, a forceful personality who imposed herself on the operating team. She was energetic, clear in expression, and expounded original ideas, and she developed a good working relationship with her surgical colleagues. She specialized in cervical epidurals particularly for major breast surgery and continuous epidural infusions for relief of postoperative pain, and she used total autonomic blockade as a means of controlling the patient’s circulating blood volume. She published several papers about the clinical aspects of these methods.13-15 The general opinion of those who knew her was that she was a “very private person.”

During her years at Columbia she never attended any social functions, such as Christmas parties. She was variously described as a “person with problems,” “difficult to get to know,” “rigid and narrow,” and “she never talked about her family.” However, some of her colleagues said that with patience on one’s own part, she could become a very good friend.

Dr. Papper (personal communication, October 2001) stated that she was a very competent anesthesiologist clinically and completely reliable in every respect. He knew of her knowledge of German and her interests in that country and also of her interests in other international activities, and he admired her for them. He said she was also a highly accomplished artist and that the bronze bust she sculpted of him on behalf of the Anesthesia faculty when he left New York to become Dean in Miami as a “goodbye” present, was one of his cherished possessions (fig. 5). He knew very little of her personal life.

One may reasonably speculate that Jean Henley’s early postwar visit to Germany was a reflection of her international interests, which she maintained throughout her life. For example, during the 1950s she undertook an intensive course in the Russian language and became quite proficient. In the January 1958 issue of a newsletter that was sent out by Dr. Virginia Apgar each Christmas to members and alumnae of the Columbia Anesthesia Department, she wrote that Dr. Henley had been conquering the Russian language every summer for some time at Middlebury College and that the previous year had acted as interpreter for a group of young Russian doctors visiting this country.

Dr. Apgar then congratulated her on plans in May 1958 to leave for Moscow as an invited guest of the U.S. Government and said she was the only American-born female

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[1] The authors have copies of these charts in their possession, and readers may obtain their own by writing directly to either author.

[2] The subsequent comments are based on verbal and written personal communications from Marilyn Kitchman, M.D., Department of Anesthesia, Columbia University College of Physicians and Surgeons, New York, New York; the late Prof. Emanuel Papper, M.D., Sc.D., Dean Emeritus, University of Miami School of Medicine, in a personal communication, October 2001.

[3] Dr. Papper (personal communication, October 2001)


Second World War. It may be said that the seeds of modern anesthesia in Germany mostly lay dormant in frozen ground and that Dr. Henley’s arrival, along with the visits of others, was the burst of warmth that led to its germination. German anesthesiology, like that in other Western European countries, now encompasses operating room care, intensive care medicine, pain therapy, and emergency medicine.

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**Conclusions**

The available evidence supports the thesis that Dr. Jean Henley made a significant contribution to the growth of modern scientific anesthesiology as a separate discipline in Germany in the years immediately after the First World War.