Early in the 20th century, neurosurgery evolved into a mature discipline as surgeons began to specialize in the treatment of brain tumors and other neurological conditions. In the Netherlands, this progress came more slowly as neurosurgical operations continued to reside within the domain of general surgeons. In 1923, the first Dutch chair in neurology was established in Amsterdam, held by the distinguished neuroscientist Bernard Brouwer (1881–1949), and this represented one of the steps in the evolution of independent neurology. Brouwer, along with his former tutor Cornelis Winkler (1855–1941), who pioneered neurology in the Netherlands and promoted craniotomy in the 1880s, anticipated an important role for surgical intervention as a way to treat neurological pathology. He advocated its use with

Abbreviation used in this paper: CPA = cerebellopontine angle.
the publication of an article about the operative treatment of spinal tumors, which had been diagnosed through the application of a new technique involving Lipiodol injection. Although favorable results were reported, the lack of dedication by the general surgeon for treatment of neurological disorders was felt. Brouwer was aware of the reports describing excellent results from the US, which he nevertheless regarded with some skepticism. He was known internationally for his studies of the visual system (especially the retinal topography in the lateral geniculate body), which resulted in the invitation to read the Herter Foundation Lecture at Johns Hopkins University in 1926. While preparing for this trip, Brouwer wrote to Walter Dandy and Harvey Cushing, expressing his desire to observe them perform surgery on “some fine cases of brain tumors” (Fig. 1). Both responded favorably. This was the beginning of a nearly 15-year period in which Cushing and Dandy were personally involved in the advancement of modern neurosurgery in the Netherlands. With the opinion that neurosurgery represented “a new therapeutically promising domain,” Brouwer returned to the Netherlands and started to promote neurosurgery as a separate specialty.

Harvey W. Cushing: Teacher and Strategist

Back in Amsterdam, Brouwer raised money to send a general surgeon to Boston to be trained in neurosurgery under Harvey Cushing. The surgeon was Ignaz Oljenick (1888–1981), who at that time was cooperating with him, seeing patients in the neurological outpatient clinic at the Wilhelmina Gasthuis (Fig. 2). Oljenick was a certified general surgeon and had a firm neurological base after completing a residency in neurology and working as a close associate with Brouwer for almost 10 years. Following Brouwer’s plan, he spent 2 years with Cushing as a voluntary graduate assistant between 1927 and 1929.

Little is known about Oljenick’s time with Cushing, except that he published several papers during his stay. Percival Bailey, when recounting his residency in 1928 with “Pepper Pot” (this was the nickname that had been given to Harvey Cushing by his cousin Perry), recalled, “I went by the operating room and saw that Cushing had taken a big Dutchman named Oljenick to assist him. This assistant lasted about half an hour and was told to get out—his hands were too big.” Nevertheless, judging from the correspondence between Cushing and Brouwer, it appears that Oljenick was able to overcome Cushing’s initial concern that he lacked sufficient surgical skill to succeed in neurosurgical operative work. Over time, Cushing noticed that Oljenick improved greatly and concluded that he was much pleased to have had him as his pupil. Oljenick earned Cushing’s high esteem and was regarded as a skilled neurologist and meticulous surgeon.

On completion of his training in Boston, Oljenick returned to Amsterdam to practice neurosurgery in the newly established Neurological Institute at the Wilhelmina Gasthuis of the University of Amsterdam, under Brouwer’s guidance and supervision. Oljenick had started scientific work on craniopharyngeal pouch tumors during his stay in Boston and planned to finish documenting his experience on his return to Amsterdam. In a 1929 letter to Oljenick, Cushing inquired:

What would you think of calling our tumors Craniopharyngeomas as an abbreviation for craniopharyngeal pouch tumors? Do you know whether Rathke ever described one of the tumors or mentioned the fact that tumors might arise from analogon of his pouch? If that is the case, we might call them on this ground Rathkenomas in order to get a still shorter word that would connote the general idea of these tumors.

Several other letters from Cushing followed, asking Oljenick about the progress with the paper on pituitary tumors, but we were unable to find evidence in the archives of the Cushing Papers in New Haven of Oljenick reciprocating with letters to Cushing. In 1930, Cushing’s correspondence ended. Two years later, in his famous publication about intracranial tumors, Cushing used the designation “craniopharyngeoma,” without mention of Oljenick’s contributions, most likely because Oljenick never provided Cushing with the reports and dropped the subject.

In Amsterdam, Oljenick’s reputation as a neurosurgeon grew. Brouwer was delighted with the improvement
of operative results and promoted Oljenick’s work in his interactions with neurological colleagues at national meetings. In a letter to Cushing in November 1929, Brouwer reported:

We all in Amsterdam thank you most deeply for all you did for neuro-surgery, also for the benefit of our country. Dr. Oljenick is following your line now in my clinic and I feel you would be satisfied in seeing how he applies your principles. He removed already some tumors with success.

It resulted in an increase of referrals of neurosurgical cases from all over the country, including from the distant University Hospital of Groningen’s Department of Neurology. In addition to playing a pivotal role in the development of neurosurgery in the Netherlands by training Ignaz Oljenick, Harvey Cushing expressed strong opinions about how the Dutch neurosurgical landscape should be structured. Initially, Cushing believed that a single neurosurgeon (notably, Oljenick) should be responsible for the surgical treatment of all brain tumor cases. Cushing recommended to Brouwer that Oljenick employ an assistant to work with him in Amsterdam.

If I were in his place, I would much prefer to have as an assistant some young man whom I could depend upon not only to help me at the operating table but whom I could train to take care of patients during the postoperative period when acute complications are likely to arise...I think that it is vital to success in this work that there should be someone always in the hospital who can keep an eye on the patients and be ready to act in an emergency such as may come from the formation of a postoperative clot or from medullary disturbances that may need an immediate lumbar puncture or ventricular puncture or something of the kind. Only in this way can one’s operative mortality be kept as low as ten percent in brain tumor cases...Such young persons could be trained in Oljenick’s own technique. It is my experience that an older surgeon can never properly learn modern neurosurgical technique successfully. For this reason I feel that Oljenick will do better work for you if he begins immediately to train some younger man rather than to have him take as a colleague some surgeon who is approximately his own age.

In 1929, Oljenick began training a resident, Arnold de Vet (1904–2001), who later would become the neurosurgeon in the Ursula Clinic, a private hospital near The Hague.

We found no evidence to indicate that Oljenick ever consulted Cushing about neurosurgical cases, or about matters concerning his neurosurgical practice in Amsterdam, except for one letter asking for help in getting the appropriate surgical instruments. Apparently, the connection between Oljenick and Cushing was not close. There was mutual respect, but Oljenick never returned to Boston after his training and it appears that he failed to collaborate with Cushing on scientific matters. On March 30, 1932, in acknowledgment of Cushing’s 63rd anniversary, Oljenick wrote a short letter to his former instructor in which he briefly mentioned a personal event, Oljenick’s daughter’s birth. This letter, written in 1932, seems to be the only evidence of correspondence from Oljenick to Cushing between 1930 and 1938.

Following Oljenick’s residency with Cushing in Boston, they met 3 times, notably in the beginning of 1929, at the 13th International Ophthalmologic Congress in Scheveningen (near The Hague), where Cushing presented a keynote lecture about blindness caused by brain tumors compressing the optic nerve. A second meeting took place on July 16, 1938, when Oljenick was present at a gathering of scientists from Europe and America at Balliol College, Oxford, to celebrate the presentation of the Doctor of Sciences honoris causa degree to Cushing (Fig. 3); 1 month later they met for the third and final time, with physician Arnold Klebs (1870–1943, a good friend of Cushing), in Nyon (Switzerland). Oljenick was absent from Cushing’s 70th birthday party on April 4, 1939, in New Haven but sent a telegram, along with Biemond, Brouwer, de Jong, and Meader. Cushing died 6 months later and was formally remembered by Oljenick with an In Memoriam in the Dutch Journal for Psychiatry and Neurology in October 1939.

In the early months of 1940, Oljenick and his family joined other Jews to escape the Netherlands because of the German invasion. He relocated to the US and settled in New York. With the help of Walter Dandy (who wrote a recommendation for membership in the American Neurological Association, December 1, 1941) and upon successfully passing a board examination by Paul Bucy (Neurosurgery) in 1942, Oljenick tried to start a new career in the US. Sadly, given his talents, Oljenick failed to build up a practice in his original profession, a fate that so many other European emigrants at the time had to accept. He changed his name to Ignaz Nic. Warburg Olinnick and withdrew from neurosurgery. He never returned to the Netherlands and died at the age of 93 years in 1981 in Manhattan.

In the northern Dutch city of Groningen, around 1930, operations on neurological cases were performed by Pieter R. Michael (1892–1985), the professor in general surgery. According to Prof. Willem M. van der Scheer (1882–1957), who became the new head of the department of neurology and psychiatry in 1930, surgical outcomes were disappointing. Against the wishes of Michael, van der Scheer decided to send future cases to Oljenick in Amsterdam. Michael was a generalist and strongly adhered to the belief that neurosurgery should be part of
general surgery. He opposed subspecialization, and new developments in Amsterdam drove him to find a way to save neurological surgery for his own department. He decided to travel to America and spend time with Harvey Cushing in Boston. Cushing received a request from Michaël, and on August 13, 1931, he wrote to Oljenick asking about Michaël’s credentials:

Do you know Professor Michaël of Groningen? He has written to say that he is planning to come over here next December for a three months’ stay in Boston. If you are personally acquainted with him, do please let me know whether he is the kind of man who would profit by and satisfactorily work into such a post as our Surgeon-in-Chief pro tempore. I would like to ask him to fill this post if he has the qualities that would in your estimation fit him for it.

It is unknown whether Oljenick responded. Judging by letters exchanged between Michaël and Cushing, they decided to meet in August 1931 at the First International Neurological Congress in Berne.

In Berne it became clear to Cushing that at least 4 Dutchmen were applying “…and learn to be neuro-surgeons in a month or two, all of them saying that there was no neuro-surgery being done in Holland and they felt obliged to ‘get aboard’…” In a letter to the neurologist Stanley Cobb (1887–1968) he confessed: “I had to treat them all very evasively particularly after learning from Brouwer that he did not feel just now there was any special need of extra men being planted in Utrecht, Groningen, etc., since Oljenick ought pretty well for the next several years at least to cover the Holland tumors…”

The Dutch neurophysiologist Joannes (Jan) G. Dusser de Barenne (1885–1940), who moved to the Laboratory of Neurophysiology at Yale University in 1930, was asked by Michaël to pursue plans to establish a neurosurgical unit within the surgical department in Groningen. On October 7, 1931, he wrote to Cushing:

I can understand entirely your attitude towards Dr. Michael’s plans and I told him frankly this summer, when he came to discuss them with me, that I feared this proposal would not meet your entire approval. On the other hand I can understand that Dr. Michael and his colleagues of Groningen University cannot adhere wholeheartedly to the opinion of our mutual friend Brouwer, when he states that, according to his opinion, Oljenick can take care of all the neurosurgical material in Holland, at least for the next years.

The situation in Holland, being a small almost overpopulated country with four universities, is a rather difficult one… It is only human that the neurologists and surgeons of the other three Universities cannot agree that all neurosurgical material should be sent to Amsterdam, even if this would be feasible from a practical and social standpoint. So the only way out seems to be to establish in each of the universities a neurosurgical unit, either in connection with the surgical department, or what I personally prefer much more, within the neurological clinic.

Dr. Michaël, the head of the University Clinic of Surgery in Groningen, wants to try to establish such a center in his clinic and thought it the best way to begin with a visit for a few months to your clinic. I told him this can only be a rather primitive way out and that besides this, he should send a senior assistant to you for a stay of at least 1 or 1 1/2 years, so that this man does not only get his practical neurosurgical training, but also in the neurological field itself...

Cushing was fully aware of the situation in the Netherlands and understood the competitive atmosphere existing among the country’s 4 universities. More importantly, he was displeased with the (foreign) general surgeons’ apparent lack of commitment to neurosurgical training and mastery of the specific clinical and surgical skills required by this new specialty. He replied:
Dear Dr. Dusser de Barenne, I wish to acknowledge your letter of October 7th. I was sorry when I saw Dr. Michael in Berne that I could not hold out anything definite for him. One can’t of course learn very much about neurological surgery in two or three months. I have been at it for thirty years and am only just beginning to know something about it. Surgeons without neurological training and without knowing something of the physiology of the nervous system can only meet with disasters if they attempt to do the sort of things for brain tumors, which constitute our daily work. It is particularly true that men who have already had a great deal of surgery along ordinary surgical lines have much to unlearn, for the technique of neurosurgical work is entirely different from what is ordinarily practiced.

I think therefore it is better for the reputation of a University Clinic to leave the subject alone unless they can find someone who can devote himself exclusively to the subject. I have had experience of people coming here and looking on for a time and then branching out as a supposed pupil of mine and doing work, which was a small credit to them selves or to us. You can understand, therefore, why I have hesitated in taking men on who are only to be here for a brief period of time...

Apparently Michaël had made up his mind, and it is very likely that Dusser de Barenne had convinced him to change his approach. In another letter, 3 weeks later, Michaël politely thanked Cushing for the opportunity of the visit. He explained that the economic situation in Holland made it quite impossible for him to leave for Boston. In January 1932, Michaël announced to Cushing his 3rd-year resident in general surgery, Dr. Ferdinand A. Verbeek (1902–1958), was to go to America “for a long time…,” expressing his hope that “…it may be possible (for you) to pay him some attention.”

In February 1932, Ferdinand Verbeek arrived at the Peter Bent Brigham Hospital. He was born into a well-to-do family on December 18, 1902. He was the fourth son of Dr. J. H. Verbeek, a family practitioner who had a large general practice in Veghel, a small city in the southern part of the Netherlands. In addition to providing for his family of 11 children, J. H. Verbeek was a landlord and an active member of his community. Five sons followed in his footsteps and continued the family tradition of practicing medicine.

Ferdinand Verbeek lived in the US from January 1932 until December 1934. In contrast to the time Ignaz Oljenick spent with Cushing, there is significant written material documenting Verbeek’s American experience (publications by Verbeek himself and the Walter Dandy papers in Baltimore). He spent the first 6 weeks with Walter Dandy at Johns Hopkins in Baltimore. Next, as agreed upon with Professor Michaël, Verbeek continued to Boston where he spent 10 weeks (April to June 1932) observing in Harvey Cushing’s department.

Verbeek was Cushing’s last registered voluntary graduate assistant (erroneously mentioned to have stayed between June and August 1932). Perhaps surprisingly, Verbeek and Cushing hardly interacted (said Cushing, “I am sorry that there are so many visitors just at the time that I have not been able to give my personal attention”), except for the day Cushing threw his “visiting doctors-party” in April 1932 (Fig. 4). Cushing did not want to do anything that would interfere with the activities by Brouwer and Oljenick, as they were developing neurosurgery in Holland, and it is possible that Cushing deliberately kept Verbeek at a distance. Verbeek was a regular visitor in Boston, but Cushing, although very polite to him in his letters, never really paid him attention. This distance, however, may also be attributed to the fact that Cushing was considering retirement; he performed his last surgical procedure on August 17th 1932.

During his first months in the US, Verbeek also visited Charles H. Frazier (1870–1936) in Philadelphia, but it was his time spent in Baltimore in February and March 1932 that was the most appealing to him and influenced his decision to apply to Walter Dandy for a position as a visitor for the remainder of 1932.

Walter E. Dandy: Teacher and Mentor

Dandy accepted Verbeek’s application, and in June 1932 Verbeek moved to Baltimore. Unfortunately, Verbeek had problems financing his stay in the US. The salary he received from the University of Groningen was scarcely sufficient to cover his American living expenses. Unlike Oljenick, Verbeek did not have a license to operate (he was a 3rd-year surgical trainee at the time he was sent to Boston) and his Dutch papers prohibited him from practicing medicine in the US. Verbeek wrote a letter to William S. Carter, Associate Director of the Rockefeller Foundation in New York, seeking financial aid. As part of his consideration of Verbeek’s request, Carter asked...
Cushing to comment on his experience with Verbeek during his stay in Boston (in fact, Cushing had hardly met Verbeek during those months), to which Cushing replied, “I think he is one of the most able and attractive of the men who have put in an appearance here this winter...I think you will make no mistake in subsidizing him...” Verbeek’s application was denied. As a result, it was now necessary to rely on his family’s financial support.

For years, a story has circulated that Dr. Verbeek senior offered to ship a 17th-century Dutch painting to Dr. Dandy in Baltimore in exchange for his agreement to take his son under his tutelage. Recently, however, consulta- 
tions with members of the Verbeek and Dandy families revealed that a Dutch painting was never sent. Instead, Verbeek senior paid a large sum to his son, thereby permitting him to stay in America.

Verbeek spent most of his time in Baltimore, becoming a respected colleague and personal friend of Dandy. He was nearly as devoted to Dandy as the members of his “Brain Team” were. In fact, when Verbeek married his Dutch fiancée, Elisabeth Franke, it was Dandy who accompanied the bride to the wedding altar. Remarkably, Frazier joined Dandy in attending the dinner following the ceremony; this was an extraordinary event at the time because it was widely known that Frazier and Dandy were not friendly toward each other. Apparently, Verbeek had managed to arrange a truce between the two men, at least for the purpose of the celebration (Fig. 5).

Verbeek was particularly impressed with Dandy’s operations for trigeminal neuralgia and Menière disease. He made drawings and accounts of all the operations, and after having seen more than 20 procedures in the CPA, Verbeek thought himself ready to go home. However, Dandy advised him to stay and to visit Charles Frazier’s clinic, which he did in the spring of 1932. By watching Frazier operating, Verbeek made himself familiar with the subtemporal route for trigeminal neuralgia, which was the approach preferred by most neurosurgeons in those days. Verbeek was impressed with the smooth way Frazier performed this procedure. Later, in 1933, Frazier showed him a case of trigeminal neuralgia in which surgery was performed via the suboccipital route (Dandy’s approach), with a devastating result. Verbeek remarked: “I realized that special neurosurgical operations had to be done by special neurosurgical experts.”

In the fall of 1932, Verbeek visited Cushing’s clinic in Boston, the Mayo Clinic in Rochester, Minnesota (Ad- son and Craig), and Wilder Penfield in Montreal, Que- bec, Canada. He also observed Max Peet in Ann Harbor, Michigan, perform a subtemporal retrosaccarner neu- rotomy in a patient under local anesthesia in the sitting position.

At the end of 1932, Verbeek returned to Dandy’s clinic, “not only to see radical surgery for gliomas” but also “to make myself much better acquainted and, if possible, quite familiar with this wonderful approach to the fifth and eight nerve.” This phrase might suggest that Verbeek assisted Dandy in these procedures or even performed the operation himself, but from the publications by Fox4 and Sherman et al., it is known that visitors and voluntary assistants were not allowed to actively participate in sur-

It is clear that Verbeek acquired a special position at Dandy’s clinic, and as mentioned, had become friends with Dandy. Verbeek had planned to return to Groningen at the end of the spring in 1933, but Dandy insisted that he stay another year. To Dandy, the neurosurgical future of Ferdinand Verbeek had become a serious matter, in part because of the implications for Dandy’s own reputation in Europe, with Verbeek as the future ambassador of his new neurosurgical techniques.

On June 9, 1933, Walter Dandy wrote to Dr. Verbeek senior, seeking his agreement to an extended stay, promising that he (Dandy) would personally assume responsibility for financing Ferdinand until the end of the year.

Dear Doctor Verbeek: I know you must be greatly disturbed to learn that your son has again changed his plans at the last moment and decided to remain longer in Baltimore. I must take the full responsibility for this because I felt it was to his best interests to spend a much longer time. I think he should stay at least a year longer, after which he would be far better equipped to handle the serious cases which one sees in brain surgery. It is the most difficult of all and there are so few competent to do it, and with the year he has already spent here he would not be able to do justice to himself, to his school, or most of all to his patients. With a somewhat greater expenditure of time he would be much better equipped than most of those who have been in brain surgery a longer period of time. An extra six months or a year will greatly ease his burden and make you correspondingly more proud of him. I hope you will forgive me. In order that he may continue I have agreed to finance him until the end of this year. Yours very sincerely, Walter E. Dandy.

The elder Verbeek concurred and agreed to support his son for one more year.

It is likely that during this final year at Johns Hop- kins, Ferdinand Verbeek designed two instruments: 1) a combined aspirator-retractor and 2) a combined suction forceps that also could be used as a (monopolar) electrocautery device (Fig. 6). A nice drawing—copied over an original drawing of surgery for the CPA made by Miss Dorcas Hager, Dandy’s medical illustrator, in 1931—was made in 1934 by Mr. Osgood (from the Brödel School of Art as Applied to Medicine, at Johns Hopkins) and used as an illustration in a publication by Verbeek in 1946. Verbeek doubted that Walter Dandy ever used these tools, as he wrote: “I am perfectly sure dr. Dandy will smile faintly at the idea of these instruments. He never worried about any bleeding and, moreover, he knows very well how to avoid bad bleedings, particularly in the cerebel- lo-pontine angle.” The paper was published in the “Dr. Walter E. Dandy Birthday Number” of Surgery, for the celebration of his 60th birthday. It appeared in May 1946, 2 weeks after Walter Dandy’s death.

Verbeek and Dandy never met again after his return to Groningen. Several attempts to join at conferences in Europe failed, and the plans of the Verbeek family to visit the US in 1939 had to be postponed because of the threat of a German occupation of the country. In spite of this, Verbeek and Dandy kept in close contact by regularly writing letters, in which they usually mentioned family matters briefly, but especially reported on their mutual neurosurgical activities and achievements. Mrs. Verbeek and Mrs. Dandy were also involved in the correspon- dence.
Walter Dandy was aware of the difficult situation at the University Hospital in Groningen, where Verbeek had to fight for his place in the operating theater. Upon his return to the Netherlands, Verbeek initially worked as Senior Assistant in the Department of Surgery of the University Hospital of Groningen, where he was allowed to operate on only one or two neurosurgical cases a week. Proper anesthesia was not available because anesthesiologists were too busy with other work at that time of the day and appropriate neurosurgical equipment was lacking. There was much disagreement between Verbeek and the other surgical staff, and Professor Michaël was unable to guide the new neurosurgical activities in the appropriate direction. It was impossible for Verbeek to cope with the various departmental policies, and this why he finally left the University Hospital at the end of 1936. He began a neurosurgical career at the Roman Catholic Hospital, a large private hospital in Groningen. Professor van der Scheer, the head of neurology of the University Hospital, supported Verbeek by referring to him all his operative cases (Fig. 7).

Isolated as a neurosurgical pioneer in the northern part of the country, the continuous support and encouragement Verbeek received from Walter Dandy was crucial. From the beginning of his neurosurgical career, shortly after his return from the United States, he corresponded with Dandy about his achievements and about the problems he encountered while trying to get neurosurgery settled in Groningen. In March of 1935, Dandy replied to Verbeek:

"I cannot tell you what a thrill your letter with your surgical accomplishments gave me: they were lovely cases. If I were you I would sit down and write an article on pneumocephalus for communication in Holland. It is a lovely result and, of course, is treated in a manner which I doubt is recognized in many places in Europe. Your nice hematoma must also have given you a great kick. It is too bad about the nice olfactory groove tumor, but one must realize that there are still many disappointments: they will diminish with the coming years. I hope you will soon get some tics and Ménière’s. We have now done eighty-two Ménière’s and without a death. The four double Ménière’s continue well. I am going to read a paper at the American Surgical on “Carotid Cavernous Aneurysms” and another before the American Neurological on “Double Ménière’s and Pseudo-Ménière’s.” I think these are good subjects for you to push along before the treatment becomes too well recognized; it will put you in the forefront.

In response to Verbeek’s problems with his professor Michaël, who insisted on keeping neurosurgery in his surgical department, Dandy wrote to him in September 1936: “…good surgery cannot be done without good support in every line. It is difficult for me to understand a man who is professor in surgery and not want things done well. I would not like to be in that position. Of course the practices of the University are dominated by the men who are running it.”

Ferdinand A. Verbeek: Dandy’s Ambassador in Europe

Dandy did not travel much, and visited Europe only once. This was in the winter months in 1923–1924, funded by a Rockefeller Foundation grant. It is apparent that Dandy hoped that Verbeek would serve as ambassador of the Dandy school, performing his type of surgeries and...
Fig. 6. Left and Right: Neurosurgical instruments, designed by Ferdinand Verbeek and illustrated by Mr. Osgood in 1934, copied over an original drawing of surgery for the CPA made by Miss Dorcas Hager. A combined suction forceps that also could be used as a (monopolar) electrocautery device (left) and a combined aspirator-retractor (right). Reproduced from: Verbeek F. A. Cranial nerve surgery in the posterior fossa. Surgery 19:612–626, 1946. With permission from Elsevier Limited, Langford Lane, Kidlington, Oxford, United Kingdom, Registration No. 198208.

Fig. 7. Official photograph taken at the opening of the neurosurgical clinic at the Roman Catholic Hospital in Groningen on July 26, 1941. Dr. Verbeek sits second from the right, next to Prof. van der Scheer from the University Hospital in Groningen, and Prof. Brouwer from Amsterdam. Mrs. Verbeek-Franke sits in front, second from the left.
Cushing and Dandy in Dutch neurosurgery

promoting these techniques to his colleagues in the rest of the country and Europe, in comparison with the many European neurosurgeons who were influenced by Harvey Cushing.

After Verbeek moved to the Roman Catholic Hospital in Groningen, where he was allowed to start a neurosurgical department, Dandy wrote in February 1937:

I am so happy to hear good reports of yourself. There is, of course, only one way to do brain surgery and that is to do it the way you are doing it. You are way ahead of the times in Holland, and if they won’t let you do anything for them, they are losing an opportunity. You have been well trained and do the best type of work and they are very shortsighted in not taking advantage of it...Do keep me informed of your progress...

Dandy kept pushing Verbeek to operate on cases of tic douloureux and Ménière disease, goals Verbeek had also set for himself. Unable to promote his operative innovations personally, Dandy encouraged Verbeek to contact the renowned European neurosurgeons, writing in September 1937: “...I think you ought to talk about Ménière’s because it is such a nice field for results. We have done 218 now without a death. Have you ever met Tön nin in Berlin? I get the impression that he is doing very good work in Germany. Have you been to see Olivecrona in Berlin? I have done 2 (two) cases, just 2 weeks ago. I had to wait 2 months before I could operate...Since I have got used to your Trigeminal operation in 10 cases in the last 8 months...I have followed your suboccipital route and subdivided the sensory root at the pons. The patient was discharged on the 10th day and is doing fine!

The last letter from Walter Dandy to Verbeek was mailed on May 31, 1939. The Verbeeks had planned to visit Baltimore in 1940, but the political situation forced them to stay in the Netherlands. The German occupation made it very difficult to correspond. As the Nazis frequently intercepted mail, only two letters from Ver beek arrived in Baltimore during wartime. On August 14, 1945, Verbeek happily reported to Dandy about the liberation from the German oppression, and mentions that he, despite being on the prisoners list of the German Secret Service (Gestapo), had been able to do his neurosurgical work during most of those years. There is no known response from Dandy, who died on April 19, 1946. Ver beek wrote an in memoriam on the same day to the Dutch Journal of Neurology and Psychiatry.

With the death of Walter Dandy and the end of World War II, a new era was launched. Neurosurgery had settled in the Netherlands as a new and growing (sub)specialty. A number of young Dutch physicians were trained as neurosurgeons, both within the country and abroad (Amsterdam, Paris, Stockholm, London, and Toronto), and new neurological departments were established. In 1952, neurosurgery was officially recognized as a separate medical specialty, with its own newly established Dutch Society for Neurosurgeons. Ferdinand Verbeek had played an important role by initiating, in 1936, together with Bernard Brouwer, the formation of its forerunner, the “Nederlandse Studieclub voor Neurochirurgie,” on the analogy of “The Neurosurgical Club” of Cushing and Sachs. Ver beek continued to practice neurosurgery at the Roman Catholic Hospital in Groningen for another decade. His reputation was firmly established among neurologists and general practitioners, and many patients directly sought his advice, causing his waiting room to overflow. Ver beek was forced by circumstances to practice his specialty almost completely without further medical assistance, and for his patients he was the only doctor in the large area concerned with their cases. He continued to draw attention to his neurological views with papers and lectures. Most were published in the Nederlands Tijdschrift voor Geneeskunde, the Dutch medical journal.

The demands of his solo work as a neurosurgeon, in combination with his temperament, took a physical as well as mental toll on Verbeek. In 1955, at the age of 53 years, he became ill and depressed and ultimately became unable to perform neurosurgery. He very much missed the support from Walter Dandy, as he wrote in a letter to Mrs. Dandy on January 7, 1947: “With every hard case I have to deal with in the operating room, there comes back to me that extremely painful idea that Dr. Dandy has passed away and I won’t be able to talk to him anymore...” He lost self-confidence, and after having taken an overdose of medication, he was referred for mental treatment and institutionalized for nearly a year. It became clear to Verbeek that he would no longer be able to work as a neurosurgeon. After being discharged from treatment, he and his wife made a pilgrimage to Fatima in Portugal, but this did not help him to find a new equi-
Concluding Remarks

Between 1928 and 1945 both Harvey Cushing and Walter Dandy played separate but essential roles in the development of modern neurosurgery in the Netherlands. With the new information derived from original correspondence from Cushing and from Dandy, a unique inside view is obtained into the way they handled strategic issues, and how they personally interacted with their Dutch disciples.

It was Harvey Cushing who provided the impetus for the development of modern Dutch neurosurgery. First, he gave Bernard Brouwer the opportunity to witness neurological surgery according to the new (Boston) standards. Second, Cushing personally trained the first Dutch neurosurgeon, Ignaz Oljenick. Third, Cushing strategically managed (and deflected) inquiries from a number of Dutch general surgeons who showed their interest in neurological surgery, to give Oljenick and Brouwer the time to solidly settle the first Dutch neurosurgical unit and to help to separate surgical neurology from general surgery in the Netherlands. For his efforts, Cushing received an honorary degree (in absentia) on the occasion of the celebration of the tercentenary of the University of Amsterdam, on June 28, 1932, and in 1935 Cushing was elected international member of the Royal Dutch Academy of Sciences.2 Oljenick made a start with the training of the first Dutch neurosurgeons, but his neurosurgical career abruptly ended at the beginning of World War II. His leaving the country signified the end of the chapter of the Cushing school in the Netherlands.

Walter Dandy was the other neurosurgical giant who significantly contributed to the development of Dutch modern neurosurgery. He did this in a warm, personal way. He was the trainer, mentor, and living example to Verbeek. Working as an isolated neurosurgeon in the northern part of the country, Verbeek completely adhered to Dandy's style and philosophy as to how neurosurgery must be performed. He did not have an opportunity to teach young neurosurgeons at his department, but perhaps he also lacked the necessary personal qualities to be an effective mentor. Instead, Verbeek promoted Dandy's surgical techniques whenever and wherever he could, serving as the ambassador of the Dandy school on the continent. He became a very respected neurosurgeon, both in the Netherlands and in Europe. The unexpected death of Walter Dandy in 1946 was a tremendous loss for Verbeek. The burden of having to make difficult decisions on his own, and no longer being able to reflect and correspond with his mentor, weighed heavily on his shoulders. Nevertheless, Verbeek continued for more than a decade, working at a high standard. In 1955, Mrs. Dandy visited the Verbeeks with her youngest daughter Margaret. The bond between both families has endured, with continued close contact between Mary Ellen Marmaduke Dandy and Paula Ingalls Verbeek and Marion Leyds Verbeek, who maintain a written correspondence through electronic mail.

The strong American influence on the philosophy and everyday practice of Dutch neurosurgeons continues to this day. Many have paid visits to neurosurgical centers in the United States, are members of the American Association of Neurological Surgeons and the Congress of Neurological Surgeons, and participate in both organizations' annual meetings. In their own way, they continue the tradition that started with Ignaz Oljenick and Ferdinand Verbeek, all for the benefit of modern neurosurgery in their small country.

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Disclosure

The authors report no conflict of interest concerning the materials or methods used in this study or the findings specified in this paper.

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