H.W. Stenvers *1889-1973*

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Hendrik Willem Stenvers was born February , , in Deventer. He died August , in Zeist. He was my grandfather's brother and therefore my great-uncle. As a child he developed sepsis following a small pox vaccination. This infection was followed by otitis media, resulting in hearing loss. As a consequence his achievements at preparatory school were below level. A tonsillectomy (at that time a major surgical procedure) was performed at the age of ten and, following it, his mental achievements greatly improved. This experience made a great impression on the young Stenvers and probably influenced his later choice to study medicine.

Figure .
Hendrik Willem Stenvers.

After finishing the 'Higher Burgher School' in Deventer he enrolled at the University of Utrecht in . His entire active life was spent in Utrecht. During his student years his interests were not restricted to medicine. For instance, he also attended lectures of Bolland, Professor of Philosophy at Leiden. This Hegelian philosopher considered pure reason as the expression of truth – a way of thinking that governed the life of my great-uncle. (Bolland's favourite expression was that statements ought to be made only after "they had passed through the 'Holy Halls of Pure Thinking'").

Stenvers graduated on October , . Three days later he started as assistant of professor Heilbronner, at the time head of the psychiatric-neurological university clinic in Utrecht and known on the continent for his work on aphasia. As a result of his philosophical studies Stenvers was interested in human conscience and thought; hence his choice for training in psychiatry and neurology. As early as the beginning of Stenvers was put in charge of the clinic's Röntgen department. He had to make and develop the roentgenograms himself and continued to do this until late in his life. In my father, who was also a neurologist, was given my great-uncle's last Röntgen apparatus.

Professor Heilbronner died suddenly in . Despite the short training-period, my great-uncle spoke of Heilbronner with much respect all his life. My great-aunt was an intimate friend of Mrs. Heilbronner. Heilbronner was succeeded by professor Winkler in February , whose influence of careful anatomical observations can be recognised in many of Stenvers' papers. Stenvers also collaborated closely with Magnus and De Kleyn. He tried to transform the experimental neurophysiology of those days (consisting of detailed analyses of posture and postural reflexes) to clinical

symptoms. During World War I, Stenvers was called to active military duty and stationed as an army doctor, first at Blerick (near Venlo) and later at Jutphaas (near Utrecht). As a consequence, he also could fulfil his academic duties in Utrecht.

In , he married Miss M.C.A. van der Laan. She had graduated as a pharmacist at the University of Utrecht. Although she was an independent woman with broad cultural interests she faithfully supported my great-uncle all his life. Their marriage remained childless. In my memory they were elderly people and not very used to youngsters. They exhibited a great erudition and liked to cite Goethe often, but they were not haughty and were always interested in other people. The stately house at the Maliebaan in Utrecht, where they lived for many years, gave the impression of scientific discipline as well as of harmony. When I stayed with them overnight in , they still had a living-in servant. In the dining room, dinner was served when my great-aunt rang for it.

During World War I, Stenvers published more than a dozen articles, mainly on the subject of cranial röntgenology and its significance for the clinician. In this period he developed the 'Stenvers projection' of the petrosal bone (Stenvers ,). Until the beginning of the s, this technique was standard whenever a pontine-angle tumor was suspected. These studies earned him eponymous fame, but he considered this technique mainly as a skill. He regarded his later work – essentially about (un)conditioned cerebral reflexes – to be more important.

In , Stenvers defended his thesis on 'Clinical study of the cerebellar function and the diagnosis of cerebellar and pontine-angle-tumors', in which he stressed the importance of X-ray examination of the petrosal bone (Stenvers). He preferred the term pontine-angle tumor to the one of acoustic neurinoma. Cerebellar dysarthria may be present in unilateral cerebellar lesions; in this case the cerebellar lesion is localised in the cerebellar hemisphere contralateral to the dominant cerebral hemisphere (in a right-handed person, therefore, in the right cerebellar hemisphere). Stenvers did not consider the cerebellum as a centre of coordination, but as a reflex organ regulating voluntary movements learned by practice (cycling, swimming, playing the piano, etc.).

Bárány's lecture, during his visit to Utrecht in , on 'Railway-nystagmus' evoked Stenvers' interest in optokinetic nystagmus (OKN). In , and , Stenvers published papers on this subject based upon ten cases, carefully controlled by surgical intervention and autopsy. He discovered that in the case of optic tract-hemianopsia the OKN is normal to both sides, whereas in the case of hemianopsia caused by a lesion of a cerebral hemisphere the OKN is absent to the hemianopic side. This means that the cerebral reflex to both sides remains preserved, even when optic impulses do not arrive in one hemisphere. An occipitofrontal pathway is responsible for the fast component of the OKN; the gyrus angularis subserves the slow component.

By means of similar investigations, Stenvers attempted to make what was known at that time as the 'silent zones' of the brain (mainly the right hemisphere) accessible for examination.

Stenvers' visit to Von Monakow in Zürich ( ) revived his interest in aphasia. Von Monakow advised him to discard everything that had been written so far on the subject and to start afresh. In his paper on "so-called aphasia, alexia and agraphia," Stenvers' philosophical approach led him to make statements such as "there is no man who has ever made a thought himself. The construction and development of our thoughts occurs as unconsciously as the chemical anabolic processes of our body. The possibility that our thoughts can be influenced should not seduce us to decide that we indeed can make thoughts. The forming of thoughts happens automatically."

Disturbances of speech, reading and writing are usually named after the deficit. Stenvers proposed to start from the principle of cerebral reflexes. A disturbance should not simply be considered as the result of a localised cerebral lesion but as the result of a disturbed reflex loop.

In later years, his interest was mainly optico-motor reactions, though he also regularly wrote about the significance of radiology for neurology. For instance, in he published a monograph titled 'Röntgenologie des Felsenbeines und des bitemporalen Schädelbildes' [Roentgenology of the petrous bone and of the bi-temporal skull]. In the renowned *Handbook of Neurology* (Bumke und Foerster) he wrote two chapters, one concerning 'Radiology' and the other 'Posture and support reflexes, support reaction' (Stenvers a,b).

Winkler retired in . As a consequence Stenvers chose to leave the University Clinic, much to his regret, and established a private practice in the Deaconess' Hospital in Utrecht. He did his clinical and his scientific work more or less alone, in the hospital or at home, consistently and faithfully sustained by the deaconesses. Even after his retirement they visited him and helped him until he died.

His studies on optic motor reactions led to several reports and ultimately to a monograph (*Les Réactions Opto-motrices*) published in when he was years old. In the monograph four phenomena are closely analysed, namely the OKN, the menace-reflex, the capacity to locate objects by grasping in the field of vision with the ipsilateral as well as with the contralateral hand (direct localisation), and the capacity to locate objects by image in a hemianopic field of vision (localisation by imagination). When examining the direct localisation the investigator stands behind the patient who is looking straight ahead. The patient is instructed to grasp an object in the peripheral field of vision. In hemianopic patients localisation by imagination can be investigated by placing an object in the intact field of vision. The patient is then asked to localise the subject in the hemianopic field of vision. Localisation by imagination can also be investigated in patients with intact fields of vision. One simply asks the patient to close his eyes. The direct localisation can be disturbed in occipital, parietal and frontal lesions. Localisation by imagination is normal when both occipital poles and a connection between them through the callosal splenium are intact. In the case of tractus hemianopia localisation by imagination is intact on both sides.

Examination of optico-motor reactions has nowadays more or less fallen into oblivion, as has the examination of colour and form recognition in the fields of

vision, an established part of the examination Stenvers recommended (Stenvers).

Another returning theme in his work was the analysis of various forms of pain. He was especially interested in 'psychalgia'; pain without demonstrable origin, usually considered as psychogenic. He proposed the term 'cerebralgia'. In accordance with his ideas on the visual system he thought that cerebralgias should be considered as conditioned cerebral reflexes. In an article published in he wrote the following about the treatment:

> "When a patient suffering from often intensive pain seeks medical advice, patience and time are the primary requirements on the part of the practitioner. The first examination requires an average of 90 minutes. History-taking should be detailed and complete, covering not only the pain per se (its localisation, nature, mode of occurrence, etc.), but the entire personality and the conflicts to which it is subject [...] History-taking, even when it seems to warrant a tentative conclusion, must be followed by a complete physical examination with a view to discovering the cause of the pain. This point is of sufficient importance to justify the emphasis with which it is mentioned, firstly because it may be difficult to detect the cause (this may require the use of all possible diagnostic aids) and secondly because a complete physical examination is of importance with a view to the further course of treatment and as an aid in establishing the necessary atmosphere of mutual confidence between the patient and the practitioner. The practitioner is always confronted with an element of uncertainty, as he knows (or should know) his own limitations. The patient, however, may be given a feeling of security in this manner: he will understand that everything possible is being done for him. It has always been my custom to have the patient indicate on a chart the localisation of his pains. This localisation often supplies valuable information regarding the nature of the pain, provided the practitioner is completely familiar with the peripheral and segmental distribution of sensitivity over the body and is informed about Head's 'referred pains' and their typical localisations [...] The next important part is the detection, in the history, of inter-relationships between the pain and certain conditions of tension associated with anxiety and fear. The circumstances attending the first attack of pain are of great importance in this respect" (Stenvers 1954).

These insights are still valid today.

Almost all his life Stenvers was scientifically active. His mind ranged over many different subjects. For instance, he described the first Cryptococcal infection of the nervous system in the Netherlands (Stenvers). He published several articles on the relation between neurology and neurosurgery. One article dealt with the position of the head in tumours above and below the tentorium. In supratentorial tumours the head has a retroflexed position and in posterior fossa tumuors the head is flexed. Stenvers thought that the head adopts a position that facilitates the outflow of cerebrospinal fluid (Stenvers).

He also had strong opinions about psychiatry. He considered this discipline a pure natural science. His article on 'Hysteria and reflexes' ( ) is still worth reading.

For most of his life my great-uncle did his scientific work alone. He therefore made no school: he was a school himself. Owing to politico-religious reasons (a catholic professor was preferred above a Mennonite) he never got the chair he deserved. A citation index search showed that his name is mentioned still, mainly in historical reviews concerning radiology. On the occasion of his th birthday a 'Stenvers volume' was published ( ). For this volume his close friend Verbiest, professor of neurosurgery in Utrecht, wrote a biography (Verbiest). Ten years later Verbiest published a shortened version (Verbiest).

About one year before his death my great-uncle had to move to a retirement home. A few days before the move he had a stroke with a serious aphasia. It was sad he had to live through this experience himself.

To conclude this biography I would like to mention that my great-uncle played an active role in the resistance movement during World War II. As a token, he received a medal with the inscription "Alleen een vrij man kan een goed geneesheer zijn" (only a free man can be a good physician). He was a good physician all his life. He was also the last of a generation of neurologists who tried to localise a lesion in the nervous system by means of refined neurological examination and precise rational reasoning.

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