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Brain disease and the study of learning disabilities in the Netherlands (c. 1950–85)

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This paper discusses the role brain disease has played in the discourse and practices of child scientists involved in the study of learning disabilities and behavioural disorders from the 1950s up to the mid-1980s, particularly in the Netherlands as part of a developing international scientific community. In the pre-ADHD era, when child sciences established themselves as academic fields of study and special education expanded quickly, brain-related psychiatric labels like “minimal brain damage” (MBD, later “dysfunction”) were often used for inattentive or hyperactive children. These diagnoses seem to have contributed to the academic status of the developing field of study by connecting neurological research into brain dysfunction with the study of learning problems and their treatment. The increasing differentiation between medical and educational research provided opportunities for those who focused on the development of American-style treatment such as behaviouristic conditioning. By 1980, more than a decade after their Anglo-American colleagues had done so, Dutch child scientists had finally lost confidence in the unspecific and overinclusive MBD label. Its popularity among the larger public, as well as concern about the rapidly growing number of diagnoses, continued to stimulate demand for more research into the nature of learning disabilities and methods of remedial teaching.

Keywords: child science; MBD/ADHD; brain disease; learning disabilities; behavioural disorders

Introduction

Today, neuropsychology plays an important role in the diagnostics of learning and behavioural disorders. Recent technological improvements in brain scans have enabled much more accurate knowledge of functions and activities of particular parts of the brain and of the central nervous system. The brain has come to be seen as the most important determinant of a person’s mental functioning, development and health. “Immaturity” of the brain and “underdevelopment” or “malfunctioning” of particular parts of the brain have become accepted explanations for adolescent and criminal behaviour and key concepts in scientific educational and psychological language, as well as in the popular discourse.¹ At the same time, however, the belief

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¹Dick Swaab, *We Are Our Brains. From the Womb to Alzheimer’s* (Amsterdam: Contact, 2010); Eveline Crone, *Het puberende brein. Over de ontwikkeling van de hersenen in de unieke periode van de adolescentie* (Amsterdam: Bert Bakker, 2008); Sheryl Feinstein, *Inside the Teenage Brain* (London: Rowmer & Littlefield, 2009).

in neuroscience questions basic pedagogical assumptions as to the use and effectiveness of educational interventions. In the “battle” between nature and nurture, the former is definitely on the winning side.

In the western world the influence of neurology and neuropsychology on education as a science is not a new phenomenon. Throughout the larger part of the twentieth century, “neurasthenia” (weakness of the nerves) or “constitutional nervositas” was a childhood mental disease that was frequently diagnosed by psychiatrists and school physicians in cases of overactivity, restlessness, distractibility or short attention span at school. In child psychiatry the label got a second life after adult psychiatrists exchanged it for Freudian neurosis, which had its breakthrough on the international psychiatric scene after the First World War. In the Netherlands, the country I focus on more particularly in this paper, the label has acted as an admission ticket to special provision and treatment of children in child guidance clinics and health camps. Here, as in the German-speaking world, constitutional nervositas was diagnosed up to the 1970s, partly as an alternative to Freudian neurosis, with its focus on parent–child interaction.²

From the 1950s, however, this diagnosis had to face competition from a new neurological disorder which, like neurasthenia, referred to an organic cause and had already gained popularity in the USA as a label for overactive or inattentive pupils: “brain injury”. It passed under many names, either describing overactive behaviour with terms such as “hyperkinesis” or those referring to its assumed cause or aetiology like “minimal brain damage” (MBD, later “dysfunction”, as damage could not be proven) or, after the neurologist who popularized the concept of “brain injury” after having pioneered electroencephalogram (EEG) research into children’s brains at the University of Wisconsin from the 1940s, the “Strauss syndrome”.³ In the Netherlands, a recent study of child psychiatry and hyperactivity maintains, MBD gained some popularity among neurologists for children with “rare and rather serious behavioural problems” and “clear signs of a cerebral disorder”, to become more popular only between 1975 and 1985, just before Attention Deficit Hyperactivity Disorder (ADHD) was imported from the USA and began to become the most frequently used label for restless and easily distracted children.⁴ With ADHD, a label describing behavioural symptoms, the treatment of these children was further medicalized as the prescription of psychotropic medicine, mostly methylphenidate like Ritalin, became the standard, and behavioural therapy only a secondary option.⁵ Consequently, as only doctors can prescribe medication, by the mid-1980s child psychiatry had become the key discipline responsible for diagnosing and treating

²Nelleke Bakker, “Before Ritalin: Children and Neurasthenia in the Netherlands,” *Paedagogica Historica* 46 (2010): 383–401. An example of a Dutch psychiatrist who referred to German sources is R. Vedder, *Kinderen met leer- en gedragsmoelijkheden*, 8th ed. (Groningen: Wolters-Noordhoff, 1974), 85–8.

³Russell A. Barkley, *Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment*, 3rd ed. (New York: The Guilford Press, 2006), 9; Russell J. Schachar, “Hyperkinetic Syndrome: Historical Development of the Concept,” in *The Overactive Child*, ed. Eric A. Taylor (Oxford: Blackwell, 1986), 19–40; Jane W. Kessler, “History of Minimal Brain Dysfunctions,” in *Handbook of Minimal Brain Dysfunctions*, ed. Herbert E. Rie and Ellen D. Ries (New York: Wiley & Sons, 1980), 18–51.

⁴Timo Bolt, *Van zenuwachtig tot hyperactief. Andere kijk op ADHD* (Amsterdam: SWP, 2010), 69.

⁵Laura Batstra, *Hoe voorkom je ADHD? Door de diagnose niet te stellen* (Amsterdam: Nieuwezijds, 2010).

children with learning problems and behavioural disorders relating to inattention and hyperactivity.

However, it is not unlikely that before the breakthrough of ADHD in Dutch child psychiatry, other fields of expertise had been concerned with diagnosing and treating children showing the same symptoms. At the time in the US, as well as child psychiatrists and neurologists, child psychologists, neuropsychologists and special educationists all contributed to the study of these problems and their treatment in regular and special schools and institutions.⁶ These decades were the era during which, across the western world, each of these research areas succeeded in establishing itself as an academic field of study, with chairs and laboratories. Moreover, the years in question saw major growth and diversification of special education.⁷ Next to the older schools for the feeble-minded, new schools were established and teaching strategies developed for normally gifted children with “specific” learning disabilities such as dyslexia or behavioural problems, a development that may be related to the diagnosis of brain disease.⁸

This raises the question of the role which brain-related or neurological psychiatric labels have played in development of the academic study of learning disabilities and behavioural disorders. Have they contributed to the process of gaining academic credit for this developing, but still largely practice-based, field of study, and if so, how? If we may assume that special schooling has acted as a laboratory for the study of learning and behavioural problems and their treatment, what role has brain disease played in the development of new programmes and approaches? It has been suggested that by the mid-1960s in the Netherlands, as elsewhere, child psychiatrists lost their key role as academics in mental health care, as both institutions for the mentally deficient and youth care and welfare were invaded by psychologists, special educationists and social workers who introduced new kinds of therapies, such as cognitive and behavioural therapy, and turned the training of communicative and social skills instead of medical treatment into these institutions’ key focus.⁹ Does this hold true also for the treatment of children diagnosed with a brain-related illness such as MBD?¹⁰ To answer these questions, this article discusses the role the brain has played in the discourse and practices of child scientists involved in the study of learning and behavioural disorders from the 1950s up to the mid-1980s. The focus is on the Netherlands as part of a developing international scientific community in which Anglo-American scientists already figured prominently, but did not yet set the standard regarding definitions and approaches in the way they do today. The paper

⁶Kessler, “History”; Schachar, “Hyperkinetic Syndrome”; Gerald Coles, *The Learning Mystique. A Critical Look at “Learning Disabilities”* (New York: Fawcett Columbine, 1987); James M. Kauffman and Timothy J. Landrum, *Children and Youth with Emotional and Behavioral Disorders* (Austin: Pro-ed, 2006).

⁷Sip J. Pijl and Cor J.W. Meijer, “Does Integration Count for Much? An Analysis of the Practices of Integration in Eight Countries,” *European Journal of Special Needs Education* 6 (1991): 100–11; I.M. Abbring, C.J.W. Meijer, and J. Rispen (eds.), *Landenstudies. Het onderwijs aan leerlingen met problemen in internationaal perspectief* (Groningen: RION, 1989), 2 vols.

⁸This is suggested for example in Coles, *The Learning Mystique*.

⁹Ido Weijers, “Zestig jaar kinder- en jeugdpsychiatrie in Nederland (1920-1980),” *Kind en Adolescent* 23 (2002): 82–96; Kauffman and Landrum, *Children and Youth*.

¹⁰Peter Conrad, “The Discovery of Hyperkinesis: Notes on the Medicalization of Deviant Behavior,” *Social Problems* 23 (1975): 12–21; Peter Conrad, *Identifying Hyperactive Children. The Medicalization of Deviant Behavior* (Burlington: Ashgate Publishing, 1976).

argues that brain disease has played a major role in the development of this field of study.

Brain injury as a cause of learning problems

In the Netherlands, special schools for children with learning and behavioural problems but a normal IQ were established relatively early. In 1949 a Royal Decree (*Koninklijk Besluit*) recognised schools for Children with Learning and Educational Difficulties (*Leer- en Opvoedingsmoeilijkheden*, LOM), next to the already existing schools for the “feebleminded”. In the USA, for example, comparable institutions were established only from 1969, when Congress passed the federal Children with Specific Learning Disabilities Act. Such schools, moreover, were established on a much smaller scale in the US, as Americans – unlike the Dutch – preferred special classes to special schools.¹¹ In terms of numbers, the Dutch LOM schools soon became successful, their numbers rising from four in 1950 to over 100 in 1968.¹² Their share of all primary pupils increased from 0.3% in 1960 to 1.1% in 1970 and 3.5% in 1984, the latter almost equalling the percentage of pupils of schools for “feeble-minded” children (3.6%).¹³ So, almost immediately after the war, a “laboratory” was available for child scientists to find out about the nature and treatment of the learning and behavioural disorders of pupils of these schools.

Experts involved in the new kind of schooling discussed the learning disabilities of the pupils as “partial defects”, which manifested themselves primarily as problems with one or more of the “three r’s” (reading, writing and arithmetic). In 1949 in Amsterdam the Dutch pioneer in this field, the psychologist Wilhelmina Bladergroen, discussed these problems at the Second International Congress on Orthopedagogics, chaired by a former school inspector who would soon become the first professor of special education in the Netherlands. She related the story of her successful treatment of a young woman who had had serious learning problems which she conceived of as effects of “brain paralysis”. According to the psychiatrist who wrote the report on the conference’s section on partial defects, pupils who struggled with these problems could all be considered as “brain injured children”.¹⁴

This statement was in agreement with developments in the USA. According to Alfred Strauss and his colleague Laura Lehtinen, reporting on their pioneering work at the Cove Schools for Brain-injured children in Wisconsin, a child could before, during, or after birth have received injury to or suffered infection of the brain, as a result of which “defects of the neuromotor system” and “disturbances in perception, thinking, and emotional behaviour” might arise that “could prevent or impede a normal learning process”.¹⁵ As regards these pupils, most of whom had serious mental

¹¹Janet W. Lerner, *Learning Disabilities: Theories, Diagnosis, and Teaching Strategies* (Boston: Houghton Mifflin Company, 1993), 42–3.

¹²J. Knijff, “Het besluit Buitengewoon Onderwijs 1967 en de geestelijke volksgezondheid,” *Tijdschrift voor Orthopedagogiek* 5 (1968): 154–67.

¹³Dorien Graas, *Zorgenkinderen op school. Geschiedenis van het speciaal onderwijs in Nederland, 1900-1950* (Leuven/Apeldoorn: Garant, 1996), 114.

¹⁴P.H.C. Tibout, “Report of the Section Partial Defects,” in I.C. van Houste and B. Stokvis, eds. *Proceedings of the Second International Congress on Orthopedagogics* (Amsterdam: Systemen Keesing, 1950), 380–5, esp. 384.

¹⁵A.A. Strauss and L.E. Lehtinen, *Psychopathology and Education of the Brain-injured Child* (Grune & Stratton: New York, 1947), 4.

deficiencies, the researchers found that children with and without a known history of brain trauma showed the same kind of learning disabilities and drew the conclusion that, regardless of their medical histories, all of them could be considered as “brain injured”. During the 1950s Strauss and his team shifted the focus of their research toward children with the same problems but a normal IQ. The increasing heterogeneity of the category of “brain-injured” children stimulated the use of a softer label, “minimal brain damage”, for children with only minor symptoms and a normal IQ. Their learning trouble came to be indicated as “specific” in order to differentiate them from mentally deficient children with more general learning disabilities.¹⁶

In the Netherlands the first and leading child psychiatric handbook, published in 1952 and authored by the one academic child psychiatrist of his pioneering generation who had not trained as a psychoanalyst, Arnold van Krevelen, discussed partial learning defects and brain injury in separate chapters, based on pre-war German and French literature. The former were identified as “intellectual defects”, and included congenital word blindness, acalculy and “slow” learning caused by a subnormal IQ. The latter were discussed under the heading “infantile dementias”. Among the various illnesses of the brain discussed by the author, from epilepsy to intoxication with alcohol, the symptoms of children diagnosed with postencephalitic encephalopathies were most similar to those mentioned for victims of the Strauss syndrome: hyperkinesia or “chorea minor” and learning problems.¹⁷

Dutch readers of the professional journal for teachers and doctors working in special education were first informed about brain injury as a cause of mental illness and deficiency, as described by Strauss and Lehtinen, in 1950, in an anonymous report about a children’s ward in a Dutch psychiatric hospital that experimented with new therapies.¹⁸ The first expert involved in the study of learning disabilities and behavioural disorders to discuss brain injury as a possible cause of learning problems of normally gifted pupils was the school physician Dirk Herderschêe, who was responsible for selection of children for the Amsterdam special schools. In 1955, in a series of articles in the same journal, he deliberately discarded the then popular Freudian reference to parental neglect as the cause of the troubles of normally gifted children who could not be kept in the overcrowded classrooms of regular schools because of capricious behaviour or learning difficulties.¹⁹ His contribution was a reaction to an essay in the previous volume of the journal authored by the highly respected first academic child psychiatrist Theo Hart de Ruyter, who as a psychoanalyst believed in early childhood neglect as the cause of this kind of problem.²⁰

¹⁶A.A. Strauss and N.C. Kephart, *Psychopathology and Education of the Brain-Injured Child* (Grune & Stratton: New York, 1955) 2 vols.; Schachar, “Hyperkinetic syndrome”; Kessler, “History”; S. Sandberg and J. Barton, “Historical Development” in *Hyperactivity and Attention Disorders of Childhood*, ed. S. Sandberg (Cambridge University Press: Cambridge, 2002), 1–29, esp. 14.

¹⁷D. Arn. van Krevelen, *Nederlands leerboek der speciële kinderpsychiatrie* (Leiden: Stenvert Kroese, 1952).

¹⁸“De opvoeding in Zonnehuis Veldheim en Zonnehuis Stenia,” *Tijdschrift voor Buitengewoon Onderwijs* 30 (1950), 93–9.

¹⁹D. Herderschêe, “De prophylaxis der oligophrenie,” *Tijdschrift voor Buitengewoon Onderwijs en Orthopaedagogiek* 35 (1955): 4–9, 21–6, 65–71.

²⁰Th. Hart de Ruyter, “De betekenis der psycho-analytische paedagogie voor de opvoeding van kinderen met aanpassingsstoornissen,” *Tijdschrift voor Buitengewoon Onderwijs en Orthopaedagogiek* 34 (1954): 38–42, 216–21.

According to the school physician, heredity and the sequelae of birth trauma or inflammation of the brain were much more likely causes.

Child psychiatry was lifted to academic status in the early 1950s. At the time, like adult psychiatry, it was dominated by Freudianism. The first generation of academic child psychiatrists, therefore, were trained to look for causes of childhood behavioural problems in the child's environment, particularly in parent-child interaction.²¹ The Freudian dominance of the developing academic field was broken only by the early 1980s, after adult psychiatry had first gone through a revival of biological psychiatry, a new generation of academic child psychiatrists had taken over from the analytic generation and a plethora of psychotherapies (such as system therapy and behavioural therapy) had been imported from the USA.²²

Therefore, it is certainly not a coincidence that the only child psychiatrist working at a university in the late 1950s who had not trained as a psychoanalyst, Frank Grewel, was the one who started to promote brain injury or "encephalopathy" as an alternative to neurosis as cause of childhood behavioural and learning problems. He was also the first Dutch child neurologist to use the electroencephalogram (EEG), a technique that had been developed in the USA in the 1940s.²³ From 1959 onward Grewel reported on his research into "partial learning defects" of children whose school performances did not match their IQ. Together with a special educationist he described, for instance, a "restless, difficult, and uncontrolled" eight year old boy, attending a LOM school, who was easily distracted, had no friends and had reading and speaking problems and uncontrolled locomotion. Because his EEG was "a little instable", they drew the conclusion that the boy "probably" suffered from a "partial neurological disorder" caused by "a delay in the development of the brain stem".²⁴ They likewise were pioneers in their plea for interdisciplinary research into these kinds of learning problems by psychiatrists, psychologists and special educationists, as "no two partial defects are the same" and it was certainly not enough to look for their causes only in the field of neurology.²⁵

Gradually Grewel also included more serious cases of "cerebral patients" in his research and came to indicate "encephalopathy" as the cause of many more or less serious learning problems. Primary abnormalities were almost always "organic", he maintained in 1964.²⁶ This led him to emphasise the importance of extensive neurological diagnostics of all learning-disabled children, including an EEG, testing of all senses and locomotion and an analysis of conditions before, during and after birth. Next to psychological testing, special educationists had to draw up an individual school prognosis for each child.²⁷ Grewel, who was appointed professor of special education in 1965, consistently warned against the choice of psychotherapy without having ruled out encephalopathy. Reading problems, for example, were often caused

²¹Timo Bolt and Leonie de Goei, *Kinderen van hun tijd. Zestig jaar kinder- en jeugdpsychiatrie* (Van Gorcum: Assen, 2008).

²²Ibid., 41–61.

²³Coles, *The Learning Mystique*, 76–7.

²⁴F. Grewel and E. Magadant-Mainz, "Partiële defecten. Analyse van een geval en aanwijzingen voor een paedagogisch-therapeutische behandeling," *Tijdschrift voor Buitengewoon Onderwijs en Orthopaedagogiek* 39 (1959): 66–74, esp. 66–7.

²⁵Ibid., 74.

²⁶F. Grewel, "Terug naar het gewone lager onderwijs," *Tijdschrift voor Orthopaedagogiek* 3 (1964): 2–11.

²⁷F. Grewel, *Orthopaedagogiek in ontwikkeling* (Groningen: Wolters, 1965).

by brain injury, he explained. Psychotherapy could only reduce secondary symptoms, he urged: "Enough mothers of wrongly diagnosed children had been subjected to frustrating psychotherapy or child rearing advice".²⁸ From his publications it is clear that Grewel was inspired by American studies from the 1940s and 1950s into cerebral palsy and brain injury as causes of childhood psychopathology, particularly those of Strauss and his colleagues.

More fundamental research into "cerebral malfunctioning" of children caused by pre- or perinatal injury to the brain was particularly stimulated by the establishment of the Department of Neuropsychology at the University of Groningen, led by the Hungarian refugee H.F.R. Prechtl, who took his inspiration from German and American scientists.²⁹ In 1963 he estimated the prevalence of the less serious variety of neurological disease, which he labelled the "choreatiform syndrome", to be an alarming 20% for school-aged boys and 8% for girls³⁰ – a number that approximated that found by Strauss and his colleagues in 1955: 15–20% of all school children.³¹ In the next year, one of his PhD students presented an even higher prevalence among children in regular schools: 24% of the six-year old boys and 9% of the girls of that age suffered from the syndrome, and only 54% of all 7–11-year-old boys were totally free of choreatic symptoms.³²

From aetiology to behaviour

By the early 1960s in the Anglo-American world, the use of the aetiological label "brain damage" for children with learning problems had come under attack. Neurologists had come to the conclusion that children with the behavioural symptoms of "brain damage" very often had no history of trauma to or inflammation of their brain, whereas children who did have this history in many cases did not show symptoms. In 1962, therefore, the Oxford International Study Group on Child Neurology held a conference addressed mainly to problems of definition and diagnosis. The term "minimal cerebral dysfunction" was recommended in place of "minimal brain damage", primarily on the basis of a consensus that brain damage should not be inferred from behavioural signs alone. In the next year in the USA three task forces were established, sponsored by the federal United States Public Health Service Division of Chronic Diseases. In 1966, Task Force I reported on identification and terminology. The monograph mentions 38 terms used to describe or distinguish the conditions grouped as minimal brain dysfunction. Task Force III, reporting in 1969, listed a total of 99 signs and symptoms exhibited by children with minimal cerebral dysfunction and recommended that effort was made to identify more homogeneous subcategories.³³

²⁸F. Grewel, "Partiële defecten. Pariëtaal syndroom," *Tijdschrift voor Orthopedagogiek* 3 (1964): 254–8.

²⁹His research into perinatal trauma and diagnosis was reported for example in H.F.R. Prechtl and J. Dijkstra, *Neurological Diagnosis of Cerebral Injury in the New Born* (Groningen: Noordhoff, 1960). His PhD student J. Dijkstra pointed at hypoxia as a predictor of neurological abnormality: J. Dijkstra, *De prognostische betekenis van neurologische afwijkingen bij pasgeboren kinderen* (PhD diss., University of Groningen, 1960).

³⁰H.F.R. Prechtl, *Het cerebraal gestoorde kind* (Groningen: Wolters, 1963), 13.

³¹Strauss and Kephart, *Psychopathology*.

³²Christina J. Stemmer, *Choreatiforme bewegingsonrust* (Groningen: Van Denderen, 1964), 11.

³³Kessler, "History," 42–3.

American child psychologists and other experts in the meantime also held a seminar assembled by one of Strauss' co-workers, the psychologist William Cruickshank, to discuss amongst other themes problems of definition. This topic, more than any other, revealed differences of opinion and provoked heated controversy. Looking backward at this 1965 seminar, the convenors stated: "A child in Michigan would be called perceptually handicapped; in New York, brain injured; in California, neurologically impaired or educationally handicapped. In Florida or Maryland, he would be said to have special learning disabilities".³⁴ This conference reflects the decreasing concern with aetiology, as the general disposition of the conferees was toward an exclusively behavioural definition, like the one that was eventually added to the American psychiatric handbook DSM-II (1968): "hyperkinetic reaction of childhood", which replaced the "chronic brain syndrome associated with birth trauma" of DSM-I (1952).

As late as 1972, a conference in New York sponsored by the National Institute of Child Health and Human Development showed a parting of ways between physicians on the one hand and educational specialists on the other hand. The medical group concerned itself with comprehensive diagnosis following a medical model and with the role of medical treatment, such as drug therapy. Educationists on the other hand focused primarily on the assessment of learning problems and techniques of special education, which had become urgent, because the 1969 federal Children with Learning Disabilities Act dictated the establishment of programmes for "learning disability" pupils. The preparation for this Act, obviously, had stimulated teachers in this field to organize themselves in the Association for Children with Learning Disabilities (ACLD), which focused on children with disorders in the development of "language, speech, reading, and associated communication skills", later referred to as "special learning disabilities" of children "with a discrepancy between performance and potential ability".³⁵

In the Netherlands these developments resonated and stimulated not so much discussion on definition or a parting of ways between physicians and other experts, but simply more research. In 1971 the decades-old Society for Teachers and Physicians working in Special Education (*Vereniging O. en A.*) organised a conference on "Children with minimal organic-cerebral damage" (*Kinderen met lichte organisch-cerebrale beschadigingen*), which brought together Dutch researchers in this field. About hundred scientists listened to the opening speech of the sole woman professor of special education, Wilhelmina Bladergroen, who promoted a fundamental sensorimotoric re-education of children diagnosed with "choreoform syndrome" or "minimal brain damage", 90% of whom had to cope with serious learning problems – mostly of the hyperkinetic and "attention lability" type – she claimed. As cause of the trouble she pointed at pre- or perinatal hypoxia (a shortage of oxygen), which happened to be a research finding of one of Prechtl's PhD students.³⁶

After the lecture some 20 groups or persons representing institutions briefly introduced their programmes. The research themes, as well as the labels that were used, varied greatly. Some were university institutions, such as the Institute for Developmental Neurology in Groningen, led by Prechtl, who focused on the neurological

³⁴Hallahan and Cruickshank in 1973, quoted by Kessler, "History," 43.

³⁵Ibid., 43–4.

³⁶Wilhelmina J. Bladergroen, "De orthopedagoog en kinderen met lichte organisch-cerebrale stoornissen," *Tijdschrift voor Orthopedagogiek* 10 (1971): 292–303.

research methodology of examinations of new-born babies and follow-up studies; meanwhile the newer group of special educationists of the same university, led by Bladergroen, studied the learning and/or behavioural problems of children diagnosed with “choreatiform syndrome”. Others were residential institutions, such as the Protestant Heldring Reformatory for girls in Zetten, which hosted the conference. Its psychiatrist was testing the use of “medicine” and the hypothesis that the girls had been neglected by their parents because of their “minimal brain dysfunction”. Another research focus, in the recently established Roman Catholic residential Roelant Stichting for children with “minimal brain damage” in Ubbergen, likewise shows that we have reason to doubt that European psychiatrists did in those days refrain, as a rule, from administering drug therapy, as has been claimed.³⁷ A multidisciplinary team of researchers compared the effects of educational treatment and amphetamine. The team’s special educationist and neurologist also tried to find out about the biochemical and neurological causes of the behavioural disorders of their patients, whom the former called “structopathic” and the latter victims of “minimal brain dysfunction”.

Some institutions focused on diagnostics, like the Child Psychiatric Centre in Amstelveen, which studied the value of a trampoline as a diagnostic instrument for the assessment of “neurological dysfunction” from a kinetic or locomotory perspective. Others focused on the improvement of a particular treatment, like the Leiden University Pedological Institute, which pioneered in systematic observation, computer-assisted instruction and using headphones to improve children’s concentration and attention span. Not surprisingly, at the conference no consensus was reached as to the definition of the disorder or a combined research effort. Even in the same institution, two researchers would sometimes use different terminology.³⁸ Nevertheless, the conference marks the higher aspirations of the developing field of academic study of learning disabilities and behavioural disorders. In the wake of the conference they started to play a more important role in the debate on brain injury or dysfunction as cause of learning problems.

In this climate one of the organizers of the conference and president of the professional society of special educationists, the neurologist J. Valk, introduced Cruickshank’s method of dealing with *The Brain-injured Child in Home, School, and Community* (1967).³⁹ The translation of the manual was given a different title: *Buitenbeentjes. Kinderen met hersenbeschadigingen thuis, op school en in de groep* (Outsiders. Brain-injured children at home, at school and among their peers, 1970). It was an immediate success.⁴⁰ The label “outsiders” even got a life of its own, as it became a common name for hyperactive children before ADHD overtook it in the late 1980s. Cruickshank propagated a method of maximum structuring of the learning process of MBD children in a minimal stimulation environment. It was based on

³⁷Schachar, “Hyperkinetic syndrome”; Kessler, “History”; Bolt, *Van zenuwachtig*, 92.

³⁸“Symposium Zetten mei 1971. Verslagen van verschillende onderzoekingen,” *Tijdschrift voor Orthopedagogiek* 10 (1971): 304–27.

³⁹William M. Cruickshank, *The Brain-Injured Child in Home, School, and Community* (New York: Syracuse University Press, 1967). His method was declined by Bladergroen, who conceived of it as too “joyless” and “untrue to life”: Bladergroen, “De orthopedagoog,” 301.

⁴⁰Between 1970 and 1975 4th ed. appeared: William M. Cruickshank, *Buitenbeentjes. Kinderen met hersenbeschadigingen thuis, op school en in de groep. Vertaald en bewerkt voor Nederland door J. Valk* (Rotterdam: Lemniscaat, 1975 4th ed.).

behaviouristic conditioning and the training of stimulus control in uncontrolled children.⁴¹ Cruickshank, who refused to treat children undergoing drug therapy, was invited to the Netherlands in 1972. When, after his lecture, he was confronted with critique of the concept of “brain damage” from a young psychologist, blaming it for obscuring social and cultural deprivation, to the surprise of the panel of experts he replicated that he could do without it. Adequate training programmes for MBD children could be developed without knowing the exact neurological base of the disorder, he claimed. The Dutch panel of recently appointed university professors of learning problems, however, did not yet want to remove “damage” from their vocabulary.⁴² In the meantime, a “structured” approach and behaviour modification techniques were widely introduced in childcare institutions and special schools, and they are still used today.⁴³

In 1973, with the support of a popular parents’ magazine (*Ouders van Nu*), one of Prechtl’s co-researchers at the University of Groningen, the neurologist B.C.L. Touwen, issued a translation of another popular product of Strauss’ initial research group, authored by Strauss and his assistant Lehtinen, together with a journalist and father of an MBD child. The book was titled *The Other Child. The Brain-injured Child* and was first published in 1960. We learn from this book that the “Other Child” (consequently written in title case) showed five conspicuous difficulties: “hyperkinesis (hyperactivity), distractibility (short attention span), disinhibition (impulsivity), inflexibility (including perseveration), and emotional instability”.⁴⁴ The authors promoted an approach to the vulnerable Other Child which focused on the need to “structure” his environment and emphasised good old order and regularity. Awareness of developments in the Anglo-American scientific world led the Dutch translator to systematically replace “brain-injured child” with “child with a functional disorder of the brain” (*een kind met een hersenfunctiestoornis*). What an Other Child needed most was understanding and acceptance of his “otherness” from his family, teachers and environment. Unlike Cruickshank, Strauss and his co-authors emphasised the need to conceive of the Other Child as unique and entitled to not only a small class at a special school, but an individual development programme, and personal guidance as well. Teachers and parents, likewise, needed expert guidance to prevent secondary effects of the child’s “otherness” disturbing their relationship.⁴⁵

⁴¹Cruickshank, *The Brain-Injured Child*.

⁴²“Toespraak van prof.dr. W.M. Cruickshank,” *Tijdschrift voor Orthopedagogiek* 11 (1972): 265–71; “Slotbijeenkomst werkbezoek,” *Tijdschrift voor Orthopedagogiek* 11 (1972): 280–2. Members of the expert panel who had recently been appointed professors of special education were W.J. Bladergroen, J.J. Dumont and J. de Wit.

⁴³J. Valk, “De structurende benadering als opvoedkundig beginsel,” *Tijdschrift voor Orthopedagogiek* 9 (1970): 222–9; Zef Hendriks, “Mogelijkheden van gedragsmodificatie bij gedragsproblemen,” *Tijdschrift voor Orthopedagogiek* 11 (1972): 350–8; J.F.M. Kok, *Structopathic Children. Results of Experimental Research of Structuring Group Therapy* (Rotterdam: Rotterdam University Press, 1972). For methods used today in Dutch institutions see J.D. van der Ploeg, *Behandeling van gedragsproblemen. Initiatieven en inzichten* (Rotterdam: Lemniscaat, 2005).

⁴⁴Richard S. Lewis, Alfred A. Strauss, and Laura E. Lehtinen, *The Other Child. The Brain-Injured Child* (New York/London: Grune & Stratton, 1960), 61.

⁴⁵R.S. Lewis, A.A. Strauss, and L.E. Lehtinen, *Het andere kind. Herkennen en begrijpen van het kind met lichte hersenfunctiestoornis* (Wageningen: Ouders van Nu, 1973).

At the early 1970s the new biological psychiatry and its language were easily adopted in manuals for professionals in child-care authored by child psychiatrists. A new introduction to child psychiatry authored by two psychoanalysts, for example, included a chapter on “organicity”, which explained both minimal brain dysfunction and minimal brain damage along the lines of their many possible symptoms, next to more serious or acute damage to the brain. Choreatiform and hyperkinetic restlessness were mentioned only as symptoms of MBD.⁴⁶ To a manual for teachers and welfare workers on children with learning and behavioural problems a chapter was added on encephalopathies such as hyperkinesia and minimal brain damage, which was said usually to be caused by hypoxia. The author of the manual presented MBD prevalence numbers higher than those reported in the 1960s. He referred to researchers like Prechtl, who had found neurological abnormalities with 20 percent of the school-aged boys, and to the German child psychiatrist R. Lempp, who claimed that 40 percent of children’s behavioural disorders were “certainly” caused by brain injury. The advice was double-edged. Drug therapy might “sometimes” be helpful, but love, understanding, and “firm and consequent control” were always needed to support an MBD child. A teacher, for example, had to understand that a child’s deplorable handwriting was a symptom of “brain damage” and a reason to warn a doctor rather than to punish the child.⁴⁷

Handbooks on learning disabilities for teachers, authored by the first generation of university professors of special education and remedial teaching, by comparison gave hardly any attention to “brain injury” as a cause of learning problems. Bladergroen, for example, preferred “choreatiform syndrome” as a label for overactive children and mentioned “light cerebral derangement” next to other organic conditions producing the learning and behavioural troubles of children she treated in LOM schools.⁴⁸ Another founder of the academic study of learning and behavioural disorders, the former MBD researcher in Ubbergen, J.F.W. Kok, briefly discussed children with brain-related disorders as a heterogeneous category of deranged children, which included children with the “choreatiform syndrome” who could be handled in normal schools, children with a “weak structure” for whom a LOM school and “structuring group therapy” were indicated, and more serious cases of “structopathic” children to be treated with cognitive and behavioural therapy in institutions.⁴⁹ All of these authors emphasized that no two learning-disabled children were the same, however, and that treatment always had to be individualised.

An overinclusive label

Whereas during the 1970s the larger public in the Netherlands got used to MBD as a label for children with learning and behavioural problems, researchers became more and more doubtful as to the reality of a childhood syndrome of brain dysfunction. This became particularly manifest when in 1977 the international Society of Biological Psychiatry devoted its annual conference in Amsterdam to “Minimal

⁴⁶Th. Hart De Ruyter and L.N.J. Kamp, *Kinderpsychiatrie* (Deventer: Van Loghum Slaterus, 1972), 123–42; De Ruyter and Kamp, *Kinderpsychiatrie* (3rd ed., 1978) 123–42.

⁴⁷Vedder, *Kinderen met leer- en gedragsmoeilijkheden*, 183–99.

⁴⁸W. Bladergroen, *Scholen voor kinderen met leer- en opvoedingsmoeilijkheden (L.O.M.-scholen)* (sine loco: sine nomine, 1970), 7.

⁴⁹J.F.W. Kok, *Struktopathische kinderen, een orthopedagogisch behandelingstype* (‘s-Hertogenbosch: Malmberg, 1970); J.F.W. Kok, *Opvoeding en hulpverlening in behandelingstehuizen* (Rotterdam: Lemniscaat, 1970).

Brain Dysfunction: fact or fiction”, from which title the question mark was significantly omitted. None of the lectures given by international experts in the field were optimistic about the future of MBD as a diagnostic entity. The president of the Society criticised the label as “ill-defined”, “vague”, and therefore open to multiple interpretation. As causes of this vagueness he mentioned the mixing up of the symptomatological and the aetiological meanings of the label, the non-specificity of the behavioural disorders commonly associated with MBD, all of which could just as well be due to causative factors of a different nature, and the ambivalence of the results of drug therapy.⁵⁰ After years of research into the influence of several kinds of drugs on MBD children’s behaviour, two Flemish child neurologists warned their co-researchers that stimulant drug therapy should be used only when hyperactivity and distractibility were the main problems. In other cases Cruickshank’s “Minimal Stimulation Program” or behaviour modification techniques like Kok’s residential therapy for “structopathic” children were advised.⁵¹

At the Amsterdam conference an American child psychiatrist criticised not only the ambiguous title, the speculative notions about mechanisms and aetiology, the heterogeneity and non-specificity of its manifestations, but also the practice of diagnosing MBD based on parents’ and teachers’ reports. These were subjective by nature, he insisted.⁵² A British colleague stated frankly that he conceived of the very loose concept of MBD as “so overinclusive as to be more harmful than helpful in clinical practice”. He also criticised the taking for granted of so-called “soft neurological signs” or slightly deviant neurological functions observed as EEG irregularities. According to him, these were proof not of MBD but of a “diagnostic of soft thinking”. Likewise, he criticised the neglect of development by researchers in the field. Children outgrew many early symptoms and the plasticity of their central nervous system had turned out to be much greater than had commonly been assumed.⁵³ This plasticity was the subject of new research by Prechtl, who reported on recent publications in this field. As with many neurologists, he had shifted the focus of his research away from the brain and toward the highly integrated and differentiated central nervous system as a whole.⁵⁴ Brains of monkeys, cats and rats were now regularly operated upon in order to find out about the way the neurological system adapted to the removal of particular parts of the brain, as one of the lectures reported.⁵⁵

The lecture given by a psychologist from the University of Groningen, Alex Kalverboer, was most critical of MBD as a label for a syndrome. Based on a review of the research literature he drew the conclusion that, despite the wide interest, progress in the field was slow. He attributed this to differences in refinement and standardisation between disciplines. Although meaningful relationships between

⁵⁰H.M. van Praag, “Introduction,” in *Minimal Brain Dysfunction: Fact or Fiction*, A.F. Kalverboer, H.M. van Praag, and J. Mendlewicz (Basel: Karger, 1978), 2–4.

⁵¹K. Pyck and P. Baines, “The Influence of Drugs on Minimal Brain Dysfunction,” in Kalverboer et al., *Minimal Brain Dysfunction*, 68–83.

⁵²D. Shaffer, “Longitudinal Research and the Minimal Brain Damage Syndrome,” in Kalverboer et al., *Minimal Brain Dysfunction*, 18–34.

⁵³W. Yule, “Diagnosis: Developmental Psychological Assessment,” in Kalverboer et al., *Minimal Brain Dysfunction*, 35–54.

⁵⁴H.F.R. Prechtl, “Minimal Brain Dysfunction Syndrome and the Plasticity of the Nervous System,” in Kalverboer et al., *Minimal Brain Dysfunction*, 96–105.

⁵⁵D.G. Grahame-Smith, “Animal Hyperactivity Syndromes and the Plasticity of the Nervous System,” in Kalverboer et al., *Minimal Brain Dysfunction*, 84–95.

neurology and behaviour were found in all observational conditions, intra- and inter-individual variability turned out to be the main research finding. Therefore, he agreed with American researchers from the mid-1960s who had drawn the conclusion that there was no scientific evidence linking behavioural disorders and independent signs of neurological dysfunction in children which would justify including them all as one syndrome. Labels like MBD and SLD (special learning disorders) referred to heterogeneous groups of children and should therefore not be used. Further study of neurobehavioural relationships, however, was urgently needed, he insisted, as was the development of relevant sub-classifications.⁵⁶

The rising interest in MBD, as well as the many mysteries surrounding the label, indeed stimulated research. Neurologists and neuropsychologists continued to look for causes of problem behaviour, whereas special educationists focused on methods of remedial teaching. More centres of study were established, including residential institutions. Kok, Touwen and Kalverboer continued to be involved in this research, which turned out to produce only more fuel for those who criticised the label as too unspecific.⁵⁷ Theoretically special educationists exchanged the neurological “Strauss model” for social learning models based on empirical research and observation in classrooms,⁵⁸ and gradually also for models that shifted the focus away from the child toward the influence of the environment on his cognitive and emotional development.⁵⁹

In 1982 the editors of the *Journal on Special Education Studies (Tijdschrift voor Orthopedagogiek)* felt the need to devote another special issue to MBD to compensate for the many oversimplified stories released by the press.⁶⁰ Suggestions had been made that 10–20% of school children suffered from MBD.⁶¹ Numbers of children sent to MBD consultants to be tested had risen to an unprecedented level, whereas scientists’ confidence in the use of the label had fallen to an all-times low. The vagueness of the popular label was underlined by the fact that in hardly any case of a tested child traces of a neurological dysfunction were found.⁶² The EEG, moreover, was now discredited by experts as a diagnostic tool. MBD, a neurologist claimed, provided children with “a licence for their behaviour and parents with a licence for failure”.⁶³ In the meantime, parents’ associations had been established, including a National Foundation to promote the “integration” of “outsiders”.⁶⁴

⁵⁶A.F. Kalverboer, “MBD: Discussion of the Concept,” in Kalverboer et al., *Minimal Brain Dysfunction*, 5–17.

⁵⁷Two publications to have come about from PhDs tutored by Kalverboer are J.A. Sergeant, *Attentional Studies in Hyperactivity* (Groningen: Veenstra/Visser, 1981); J.J. van der Meere, *Attentional Deficit Disorder with Hyperactivity: A Misconception* (Groningen: Universiteitsdrukkerij, 1988).

⁵⁸J.J. Dumont, *Leerstoornissen 3. Controversen en perspectieven* (Rotterdam: Lemniscaat, 1982).

⁵⁹J.F.W. Kok, “Structuurzwakte door opvoeding,” *Tijdschrift voor Orthopedagogiek en Kinderpsychiatrie* 3 (1978): 21–9; H. Baartman, “Ontwikkelingen in de theoretische orthopedagogiek,” in *Orthopedagogiek: inzicht, uitzicht, overzicht*, ed. R. de Groot and J. van Weelden (Groningen: Wolters-Noordhoff, 1992), 46–73.

⁶⁰R. de Groot, “Redactioneel,” *Tijdschrift voor Orthopedagogiek* 21 (1982): 203–4.

⁶¹J. Troost, “MBD en de rol van de kinderneuroloog,” *Tijdschrift voor Orthopedagogiek* 21 (1982): 239–43.

⁶²M. de Feijter, E. Lelieveld, and A.F.M.M. Verdonck, “Minimal Brain Dysfunction?” *Tijdschrift voor Orthopedagogiek* 21 (1982): 205–18.

⁶³Troost, “MBD,” 243.

⁶⁴Landelijke Stichting Integratie Buitenbeentjes, *Meer begrip voor buitenbeentjes* (Lochem/Poperinge: De Tijdstroom, 1979).

Books, pamphlets and magazines spread the message about the organic background of learning and behavioural problems. Neither children nor parents were to blame: the central nervous system was.⁶⁵

The rising number of MBD diagnoses had significant effect. When government expenditure on special education and institutional care for these “neurologically impaired” children continued to grow, the National Health Council installed a committee of experts in 1979 to advise on this matter. Neurologists, such as Touwen, and psychologists, such as Kalverboer and Prechtel, were among its members, as was one special educationist, Kok. The committee did not report before 1985. Consistent with the international scientific consensus, the report unanimously discarded the MBD label as “inadequate and unjustifiable”. However, because the use of the term was so widespread and established in the literature and in common speech, the committee did not recommend throwing it away; the experts emphasised that they used it only to indicate “certain symptoms of a group of behavioural and learning disorders” and explained that the international literature had already got rid of MBD and replaced it with “hyperactivity” and “attention deficit disorder”. In line with Kalverboer’s earlier conclusion, the experts moreover insisted that rather than referring to a syndrome, “the use of the term MBD should be regarded as a signal to commence investigations in various directions for the purpose of drawing up a diagnostic profile of the child in question”.⁶⁶ The Dutch experts now disapproved of the use of drug therapy, as there was no proof that a biochemical defect caused the problems of MBD children. Categorical facilities or rehabilitation centres were no longer needed, as the individual child’s learning problems had become pivotal. More research into these problems and their treatment, however, was an urgent need, according to the committee.⁶⁷

That is what happened. From the mid 1980s child scientists stopped using MBD as a label for a childhood syndrome and psychiatrists began to use the American DSM handbook, which had never included it as a childhood mental illness. Special educationists continued their research into much more specific fields under the umbrella of learning disabilities, such as dyslexia, dyscalculia and so on. Child psychiatric manuals for school physicians and professionals in special education and youth care replaced the label MBD with the new DSM-III (1980) label ADD with or without Hyperactivity, and later with DSM-III-R (1987)’s label ADHD.⁶⁸ At the same time LOM schools were seriously criticised as being too expensive and promoting separation instead of integration of children with only minor problems. Pupils with special needs were to receive individualised educational support within the regular school, guided by centres of expertise, the new consensus taught.⁶⁹ With the help of the media, parents and their associations needed only a little more time

⁶⁵For example: Elisabeth Lockhorn, *Mijn kind is anders. Ouders en specialisten over Minimal Brain Dysfunctie (MBD)* (Amsterdam: Meulenhoff Informatief, 1981).

⁶⁶Gezondheidsraad, *Eerste deeladvies inzake Minimal Brain Dysfunctie (MBD)* (‘s-Gravenhage: Gezondheidsraad, 1985), 13–14.

⁶⁷*Ibid.*, 115–32.

⁶⁸F.C. Verhulst and J.A.R. Sanders-Woudstra, *Kinderpsychiatrie voor de praktijk* (Alphen aan den Rijn/Brussel: Samsom Stafleu, 1987), 100–6.

⁶⁹K. van Rijswijk and E. Kool, “De ontwikkeling van het speciaal onderwijs in de tweede helft van de 20e eeuw,” in *Het kind van de eeuw: het kind van de rekening?*, ed. R. de Groot and J.D. van der Ploeg (Houten: Bohn StafleuVan Loghum, 1999), 131–55.

before they would exchange the overinclusive, aetiological label of MBD for the descriptive one ADHD and to submit to Ritalin's regime.

Conclusion

In the Netherlands diagnoses of brain-related illnesses such as MBD have played an important role in the development of the study of learning disabilities and behavioural disorders as part of an interdisciplinary and increasingly international child science. Between 1950 and the late 1970s brain disease contributed considerably to the academic status of this field of research, by connecting neurological research into brain trauma and dysfunction with the learning and behavioural problems for the treatment of which LOM schools were established. These problems were neither rare nor very serious, and the symptoms were too differentiated and unspecific to establish a causal link with neurological trauma or even a particular dysfunction. In 1971 the study of children diagnosed with "minimal organic-cerebral damage" and the treatment of their learning and behavioural disorders occupied no less than 20 research groups. The more accomplished parts of the research, however, were done by neurologists and neuropsychologists, the majority of whom did not aim at a career in the academic field of learning disabilities. Some researchers, however, grabbed their chance, as an increasing differentiation between medical and neurological research on the one hand and educational research on the other provided opportunities for those who focused on the development of American-style treatment of overactive or inattentive children with behaviouristic conditioning. By 1980, almost a decade after their Anglo-American colleagues had done so, Dutch child scientists had collectively lost confidence in the unspecific and overinclusive MBD label for children with learning and behavioural problems. Its popularity among the larger public, as well as concern about the rapidly growing number of diagnoses, further stimulated the demand for research into the nature of learning disabilities and methods of remedial teaching. Special education of children diagnosed with brain-related illnesses like MBD does indeed appear as another aspect of mental health care in which the introduction of new cognitive and behaviouristic therapies in the 1970s led child psychiatrists to lose their key staff and researcher roles to psychologists and educationists. In this case there was only a short interlude before Ritalin successfully replaced these therapies and re-established a predominantly medical regime.

Notes on contributor

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