Clinical Neuropsychology in Germany

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In order to present a somewhat coherent picture of the development and present state of Clinical Neuropsychology in Germany, I shall first try to define Neuropsychology, both as an experimental science and a clinical profession. I shall then give a brief overview of the history of its development in Germany. In describing the present state of affairs with regard to the professional organization of clinical neuropsychologist, I shall also go into details of training and certification. Finally, changes are described which are imminent as clinical neuropsychologists fall under a newly passed psychotherapy law which is meant to regulate mental health care professionals, and some of the consequences for European and International harmonization in the field of Clinical Neuropsychology are discussed.

Definitions of Neuropsychology

As a scientific discipline Neuropsychology is concerned with the central nervous bases of psychological phenomena and behaviour. Neuropsychology has also been described as a pragmatic and eclectic broadening of psychology and ‘the legalization of a difficult to hide affair of psychology with physiology’ (Hebb, 1951). And Mario Bunge characterized the natural symbiosis of brain and behavioural sciences as ‘a very much needed synthesis of mindless neuroscience with brainless psychology’ (Bunge, 1981).

Neuropsychology is always experimental as well as clinical, and the interaction between lab and clinic is one of the hallmarks of this discipline. Clinical Neuropsychology as a profession uses the knowledge derived from experimental neuropsychology for the diagnosis and treatment of patients with central nervous disturbances. The American Psychological Association has given Clinical Neuropsychology a specialty status and gives this definition:

‘A specialty profession that focuses on brain functioning, requiring expertise in how behavior and skills are related to brain structures and systems.

Diagnoses are based on objective tests of abilities and skills with the aim of a detailed assessment of strengths and weaknesses. Evaluations may result in recommendations for interventions and treatment.

Neuropsychological treatment may involve cognitive rehabilitation, behavior management, and/or psychotherapy” (Adopted from an educational pamphlet distributed by Div. 40 of the American Psychological Association, 2001).

To be more specific, the main functions of a Clinical Neuropsychologist as a provider of diagnostic and therapeutic services to patients with suspected or already diagnosed central nervous dysfunctions, are the following:

1. Diagnostic evaluation of perceptual, higher motor and cognitive functional capacities, as well as personality, affect and general behavior. This includes the perception and experience as well as his reactions to the illness and the changes of his life situation;

2. Planning, implementation and evaluation of appropriate psychological therapeutic interventions; treatment of deficits and efforts to achieve reintegration into family, occupation and society, includes interventions relevant for coping with illness and disability.

3. Supporting the planning and evaluation of non-medical and medical-therapeutic interventions (e.g. physi-
4. Advising, counseling, and therapeutic support of the patient and relatives or relations with regard to the complaints of the patient, the diagnostic results and life plans as well as the therapeutic possibilities; in this context the patients' social surround and its conceivable cotherapeutic use as well as the possibilities available through the medical and social security system have to be explored and explained.

5. Performing independent work as an expert (such as providing expert opinions for patients, insurers, courts, etc.), for example, with regard to decision making concerning rehabilitation, choice of profession and education, occupational retraining or in areas of public assistance, support or compensation.

As Clinical Neuropsychology expanded several subspecialties have developed: Perhaps foremost to be acknowledged is the specialty of Pediatric Neuropsychology, which requires special additional expertise in how learning and behavior are associated with the development of brain structures and systems. In Germany most Pediatric Neuropsychologists prefer to call themselves Child and Adolescent Neuropsychologists to avoid being seen as a medical subspecialty practitioners.

Since the professional label of psychologist is now more less protected by law, presupposing a complete university education and a degree in psychology, medical professionals, completing a specialty training identical to those of neuropsychologists, can now earn an informal certificate in “Behavioural Neurology”. However, the originally planned development of a parity model of training and certification for physicians and psychologists has not yet been realized. Furthermore “Behavioural Neurology” is not a formal subspecialty, and currently various other specialty terms such as “Cognitive Neurology” have come into use.

The development of Clinical Neuropsychology in Germany

Clinical Neuropsychology essentially developed from the efforts of medical doctors, psychologists and pedagogues to rehabilitate brain injured soldiers during and after World War I. The diagnostic and therapeutic instruments were derived from tests which differential and applied psychology had constructed in education (Binet & Simon, 1905; Meumann, 1901), Psychiatrie (Kraepelin, 1895/1896) and industry (Munsterberg, 1891, 1914). Medical support came from the wealth of new neuroanatomical knowledge acquired during the second half of the 19th Century.

Differences in capabilities and in brains: Differential psychology and differential neuroanatomy

The development and use of tests in applied settings led to a new specialty, which was called “Psychotechnik.” Psychotechnics started to boom with the rise of industrialization and the increasing mechanization of daily life at the beginning of the 20th Century. The main task of the psychotechnician was to select particularly capable persons and train them, for example, for the new machines in factories or the new transportation technologies, such as streetcars, trains, busses, airplanes. Since the technical means were not yet available to adapt the machines to the capacity of an average human being, persons fitting the requirements of the machines had to be found.

Academic psychology was not really very supportive of the applied efforts of differential psychologists and psychotechnicians. For one thing, psychology was a new science mainly interested in establishing general laws of behavior, thus individual differences were a source of error to be eliminated. For the differential psychologist, however, the variability among people was of major interest. With regard to applied psychology many of the leading psychologists, like Wilhelm Wundt complained about premature applications, lack of scientific standards and feared it would hurt the developing new science. As a consequence applied psychology developed mainly outside of the universities.

Parallel to the development of differential psychology, in medicine the study of the brain had also lead to a new view of differential localization of specific functions in
various brain structures. This was based on findings about the morphology and histology of the brain (Brodmann, 1909; Flechsig, 1901; Meynert, 1867), on the results of lesion and stimulation studies in animals (Ferrier, 1886; Fritsch & Hitzig, 1870; Munk, 1890) and on the description of behavioral changes in patients with pathological changes of their brains (Bonhoeffer, 1899; Broca, 1861; Gudden, 1896; Jackson, 1878; Liepmann, 1900; Wernicke, 1874; Wilbrand, 1887).

Wars stimulated the development of Clinical Neuropsychology

Progress in arms technology stimulated the development of Clinical neuropsychology in several ways. At first, the built-up of the military and its new technologies (tanks, airplanes, trucks) required psychotechnical personnel selection and training. Then during World War I, the same psychotechnical skills were applied in the diagnosis of those who fell victim to the new arms technology. Furthermore, the development of high velocity projectiles lead to lesions which often were restricted in size and "surgically clean." Together with medical progress in wound treatment, this lead to an increased number of survivors of brain damage during the war. And the state was thus confronted with a great number of young and – with the exception of their brain injury – basically healthy men. So, already during the war special hospitals with psychological laboratories and schools were established for the brain damaged soldiers. The primary aim was to rehabilitate these young men to again become productive citizens of society. In a way they were supposed to fulfill their part of the social contract on which the compulsory health care and social insurance system was based since its development at the turn of the 19th to the 20th century. The efforts of this rehabilitation have been described in some detail (Fuchs, 1918; Goldstein, 1916, 1919; Moede, 1917; Poppelreuter, 1916, 1917, 1918).

However, the social and professional reintegration in most instances failed. It became apparent that brain wounds don't heal like other wounds, and at the time there was no effective way to treat posttraumatic epilepsies. Thus, because of the epilepsies and the increased irritability, premature fatigue and difficulties to cope with complex daily life situations, most brain injured soldiers remained dependent on continuous care and support.

During World War II, clinical neuropsychology played only a minor role in Germany. One of the reasons for this was, that with the leading Jewish scientists who lost their jobs, were incarcerated, killed or forced to emigrate, almost all of experimental psychology was lost during the Nazi regime. And thus a vital source on which a scientific neuropsychology is dependent, was eliminated. Most of clinical neuropsychology was reimported to Germany, mainly from anglo-saxon countries, who during World War II and in the United States also after the Korean and Vietnam Wars, instituted very strong Clinical Neuropsychology programs within the government support systems for war veterans.

New beginnings in Germany after the war

It took several decades after the war for Experimental Psychology to be reestablished at German universities and even longer for Clinical Psychology to develop. Neuropsychological research was present at some neurological clinics, but only recently Neuropsychology has begun to gain ground at Academic institutions. As before the war, Clinical Neuropsychology again developed outside of the universities. In 1952 the first rehabilitation clinic for head injured persons was established. In the beginning therapists were artists and craftsmen. Only slowly professional therapists and psychologists became part of the team. A similar development took part at other newly founded institutions for the rehabilitation of brain injured.

Together with psychologists who had been trained abroad, the professionals working in the first rehabilitation clinics started to develop a scientific and professional identity. They organized meetings and workshops, developed tests and guidelines and finally in 1986 founded the „Gesellschaft für Neuropsychologie GNP“, the Society for Neuropsychology. This society today represents approximately 1300 practicing clinical neuropsychologist, eighty percent of whom are employed workers in clinics.
a small percentage work as independent practitioners.

**Training and certification in Clinical Neuropsychology**

Most of the psychologists presently working in the area of Neuropsychology, i.e. in neurological clinics and rehabilitation hospitals, were hired as psychologists straight from the university. All of them have studied psychology for a minimum of four years at a university and received a Diploma or equivalent in Psychology. The first two years of studies are concluded by examinations in general psychology (learning, memory, motivation, perception, cognition), in developmental as well as differential- and personality psychology, furthermore in methodology (experimental methods, design as well as descriptive and inferential statistics) and biological or physiological psychology. During the following two years methodological subject areas such as diagnostics, psychological interventions and evaluation as well as applied areas such as clinical, educational and/or industrial and organizational psychology are covered. The student also should have obtained practical experience in different applied professional settings. Such practica can range from a minimum of six weeks to six months. Following another series of examinations and the successful completion of a thesis a diploma in psychology is awarded.

The amount of theoretical as well as practical experience gained during their university studies with regard to experimental and Clinical Neuropsychology differs greatly. It is fair to say that most practicing Clinical Neuropsychologists learned their Neuropsychology on the job. Some had previous postgraduate training in clinical psychology, especially in one or more forms of therapy, and still others had some experience working in various non-neurolological clinical environments before moving into neuropsychological areas. The number of those with specific pre- and postgraduate practical training in Clinical Neuropsychology is small but constantly growing.

By design the training in psychology is broad and intended to enable the Diploma-Psychologist to quickly gain expertise in various applied areas. Nevertheless, students as well as teachers and practitioners agree that some form of postgraduate and continuing education would be indicated for several, especially clinical occupations. Because an increasing number of psychologists with varying backgrounds is moving into Neuropsychology the necessity arose to establish a specialized program of postgraduate and continuing education and to set certain quality standards for professional practice.

From 1988 until 1994 subcommittees of the GNP established a curriculum and certification procedures for Clinical Neuropsychology. With the successful completion of the postgraduate training a certificate “Clinical Neuropsychologist GNP” is awarded. Candidates for this certification must

a)  hold a Diploma or equivalent in psychology (i.e., have completed successfully a 4 to 5-year program at a university as ind) ;

b)  have had at least three years of practical experience having held a full-time position in an accredited institution. Alternatively, the candidate should have worked in a specially defined and specifically supervised postgraduate position with at least a half-time clinical load ;

c)  have documented their working experience by supplying ten differentiated case descriptions from the last two years, covering various neuropsychological syndromes. The case descriptions should include data about etiology and—if appropriate—localization of lesion, relevant medical details as well as the details on neuropsychological diagnosis, therapeutic measures implemented and their evaluation. Two of these ten case reports should be expertises ;

d)  have completed a total of 1000 hours of postgraduate courses. At least 300 of these must be satisfied through courses and seminars outside of the institution, in which they have worked.

The postgraduate curriculum itself includes courses in the following subject areas:

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2Perhaps it should be mentioned that there is nothing equivalent to an undergraduate education in Germany. Entering the University after 13 years of school, means specializing in one academic subject area.
**Basics of experimental and clinical neuropsychology**

Biological basis of brain functions.

Brain structures and brain functions.

Electrophysiological studies and imaging techniques.

Descriptions of classical neuropsychological syndromes.

General diagnostics, test theory and statistical methods in neuropsychology:

e.g. patient history, rating methods, behavioral diagnostics, interactional diagnostics; psychometric and directed test procedures; unilateral hemispheric stimulus presentation; information processing and lesion studies.

**Neuropsychological diagnostics**

Hypotheses directed selection, scoring and evaluation of diagnostic procedures with regard to a specific question, in the context of etiologic information and/or lesion localization, specific neurological deficits, biographical information and present life situation including occupational requirements or demands.

Differential diagnosis.

General clinical–psychological and psychotherapeutic diagnostics.

Diagnostic evaluation of changes over time.

Writing neuropsychological expertises.

**Neuropsychological interventions with regard to cognitive processes**

Establishing rapport with the patient.

Construction and implementation of therapeutic concepts on the basis of the present situation and individual life history of the patient as well as etiologic and deficit specific factors and models.

Individual applications of scientifically proven and validated neuropsychological training programs.

Use of knowledge of psychological science and neurological disease conditions.

Advising and counseling of patients and relatives as to the concept and implication of measures implemented to achieve reintegration into daily life routines and occupational activities.

**Knowledge of psychotherapeutic interventions within the realm of neuropsychology**

Constructing a therapeutic concept on the basis of premorbid and present perception of deficits as well as changes in performance capacity and actual behavior.

Coping with disease and crisis intervention.

Putting the therapy in the context of family and occupational as well as psychosocial environment.

Secondary and tertiary prevention.

**Neuropsychological Supervision**

Working with patients together with the supervisor.

Reflecting, reviewing and evaluating therapeutic activities with regard to short- and long range goals of rehabilitation.

Reflecting one’s own role as therapist, the role of the neuropsychologist and his methods within the interdisciplinary team.

Practicing interdisciplinary cooperative skills.

**Knowledge of neighboring disciplines**

Clinical neurology, psychiatry (nosology, basics of epidemiology, etiology, symptomatology, time course, medical treatments and prognosis).

Developmental neurology.

Functional neuroanatomy.

Psychopharmacology/Pharmacopsychology.

Psychophysiology.

Neurolinguistics, especially with regard to aphasiology.

**Interdisciplinary cooperation as well as knowledge of institutional, organizational, legal and social security conditions**

Cooperative interdisciplinary team work.

Ambulatory follow-up.

Case management.

Health care system.
Legal issues.
Professional ethics.

Training institutions and course programs will be evaluated and accredited according to specific rules. Periodic checks, including site visits, are planned. The basic core of experts required for first evaluations and certifications is presently selected on the basis of a grandparent rule, which will be in effect for a limited period of time only. Eligible are only psychologists with more than ten years of practical experience in Clinical Neuropsychology. Until a fully functioning program is completed interim rules apply, by which the requirements of the curriculum can be met. This concerns especially psychologists with several years of experience as Clinical Neuropsychologists, working or having worked at institutions which so far have not been accredited.

The psychotherapy law of 1998

When after several decades of deliberation, the federal "psychotherapy law" was passed in Germany, it was meant to regulate an increasingly growing "therapy market" which took advantage of the plight of patients and put pressures on the politicians and the health care system. The new law demands that any kind of psychological treatment requires a Diploma-Psychologist to have obtained a special certificate ("Approbation"), similar to that of physicians before they are allowed to practice medicine. Only psychological counseling is exempt from this regulation. Since the work of clinical neuropsychologists "directly influences the health of patients;" they are considered psychological psychotherapists by law. The law also forbids psychotherapists to employ therapies which have not been scientifically proven to be effective. Under the provisions of this law a governmental expert panel recently determined that neuropsychological therapy is a scientifically proven effective psychotherapy.

In most cases this neuropsychological therapy is a form of behavior therapy including training units of neuropsychological functions, which are based on psychological and neuroscience knowledge. In certain ways the psychotherapy status is an advantage, not only in terms of an independent health practitioner. It also forces the neuropsychologists to put more efforts into elucidating the interactions of psychological reactions, such as depression, with possible deficits in attention, memory or motivation, and to adjust their therapeutic concepts accordingly. It also may help to prevent a development of Clinical Neuropsychology towards an exclusively diagnostic profession.

A major problem is the present attempt of various advisory bodies to integrate the neuropsychological specialty education into those required by law for psychological psychotherapists. Since there is a generally growing interest in brain-behavior-relations, we are hopeful to be able to integrate more than the originally planned neuroscience subjects into the official psychotherapy curriculum. We also hope to introduce the possibility for specialization during the three-year full-time (five-year part-time) education of psychotherapists, which would make it possible to reduce those subject areas and requirements of only marginal relevance to clinical neuropsychology.

On the other hand, the new law and status of the neuropsychological psychotherapist presents many problems: For the time being it produces a period of insecurity among those practicing outside of established clinics and being dependend upon reimbursement by governmental and private health and social insurance. As several other laws have to be adjusted with regard to the consequences of the psychotherapy law, even many professional agencies don't know exactly what to do. In a typical fashion responsibility is continuously shifted from one to another agency. A particular problem is the division and overlap of federal and state authorities with regard to health and education as well as the lack of organizational structures for psychotherapists similar to those, that the medical professions established over a hundred years ago.

Outlook with regard to European and global harmonization

As the psychotherapists and with them the clinical neuropsychologists struggle to harmonize rules and regulations among the 16 states of Germany, attempts at Eur-
opean or even Global harmonization become even more difficult than before. Because, the more regulated in detail one country becomes, the less overlap with systems of the other countries exist. Laws regulating the training and certification of health professionals as well as the health care and social systems itself vary widely among European countries. Since the European Union demands the free interchange of professionals between its member countries, major efforts will have to be made to insure equal standards of service. First steps in this direction are the establishment of a European Credit Point System at the universities, which hopefully can be extended to the postgraduate educational level. Also, representatives of various psychotherapy organizations have instituted a European Certificate of Psychotherapy, with which the various national organizations acknowledge the equivalence of certificates issued by other national membership organizations. These are small steps, but important ones.

Certification, licensure and accreditation always imply control and power (not just a lot of work). The tension that this creates runs not only between different professions which have a tendency to mutually exclude each other from certification; it also runs within professions. Divisions suddenly become apparent as the rules of licensure are defined—divisions due to different educational background, differences in professional experience or even simply age. Major efforts will be necessary to overcome these divisions. And this is where even very small steps in international and interdisciplinary cooperations are helpful to overcome nationally grown prejudices and professional egotisms.

References


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