

Outline of the History of Neurorehabilitation in Denmark – a Sociological Perspective

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This article unravels the genesis and history of neurorehabilitation (NR) in Denmark in order to understand the transformation that this subfield has undergone since the 1970s and how this is reflected in the present structure. Seen through the lens of Bourdieu's concept of field and based on a document review strategy of historical sources and political documents the article constructs three analytic periods: 1. the genesis of NR until the first half of the 1980s, 2. the institutionalization of NR from 1985-2006 and 3. the political restructuring of NR after the local government reform in 2007. Our analysis shows that NR is a multi- and interdisciplinary practice characterized by heterogeneity, although with growing homogeneity in clinical practice due to an increased number of NR institutions, and later political guidelines. We conclude that despite an increased power to psycho-social and comprehensive approaches, biomedical knowledge is still dominant and reflected in doxa.

Keywords: Denmark, Field, History, Neurorehabilitation, Social positions, Structure

Introduction

Across Scandinavian societies, we see current transformations of welfare state institutions and conditions for patients, relatives, professionals and politicians (Højbjerg and Martinussen 2016). These transformations are also evident in institutions and practices related to neurorehabilitation (NR). NR is an example of a professional practice attempting to monopolize the knowledge of how to handle people (Carlhed 2007, 42) – in this case people affected by brain injury. In Denmark (population 5.7 million), 22,000 people acquired a brain injury in 2015, and it is estimated that at least 120,000 Danes live with the consequences of disability after brain injury, affecting the lives of patients and their relatives in different ways (National Audit Office 2016). The number of post-brain-injury individuals has increased over the years due to new treatment possibilities and thus increased survival (Borg et al. 2011). The Danish welfare state provides free health care services for all citizens, regardless of their income (Ministry of Health 2016). NR services are often technologically advanced, relative to the complexity and comprehensiveness of the brain injury, and may involve many different and specialized healthcare

professionals. Due to the large number of people affected by a brain injury, NR is a heavy expenditure for the welfare state (National Board of Health 2011).

In the wake of the Local Government Reform in 2007¹ NR practice has been criticised by the state and the regions, documenting challenges with the organization of services entailing lack of coherence, uneven quality of rehabilitation practices (National Board of Health 2011; Danish Regions 2011; Ministry of Economic Affairs and the Interior 2013). These post 2007 criticisms have been followed up by several financial grants to the regions and municipalities to strengthen their services. However, despite both ongoing criticism and the distribution of grants, a recent National audit (2016) states that these challenges are still pertinent.

When studying complex social transformations such as NR, we consider a Bourdieuan field perspective applicable. Bourdieu studied many social fields, including the cultural field of art (Bourdieu 1996a), the academic field (Bourdieu 1988) and the economic field (Bourdieu 2005). He did not analyze the field of health care or of rehabilitation. Recently however, Pinell and Jacobs (2011) have undertaken a Bourdieuan-inspired analysis of the medical field in the 19th century in France where they construct three spaces: Clinical medicine, social medicine, and auxiliary sciences - and investigate the relation between these spaces. Other scholars have focused on rehabilitation in the Scandinavian welfare states from a Bourdieuan perspective: Carlhed's (2007) historical analysis of habilitation practices on the development of the Swedish health care system identifies an alliance between the state and the medical profession; Feiring and Solvang's (2013) study of the formation of rehabilitation identifies a shift from a biomedical to a broader medical and social orientation; and Larsen's (2003) analysis of power structures among health professions in a Danish context shows how biomedical disciplines retain their power bases. In addition, Guldager et al (2018) construct the concept 'rehabilitation capital' as an individual or family resource that is valued in the field of rehabilitation and consists of physical, behavioral and cognitively embedded attitudes and practices.

In order to approach an understanding of the transformations and structuring including challenges of NR, our aim is to unravel the genesis and history² of NR practices in Denmark, analyzed as products of welfare state policies, practices and knowledge development hence relations of domination between positions reflected in comprehensive NR practices. Our research questions are:

Who were the main historical agents and positions in NR and how did they gain influence? How did these diverse positionings materialize and become reflected in the doxa (common beliefs) of NR? Which other fields have influenced NR and its knowledge-practices, and relative autonomy?

To address these questions, we have constructed three periods: Period 1, the genesis of NR until the first half of the 1980s; period 2, the institutionalization of NR from 1985-2006, and finally, period 3, the political restructuring of NR after the local government reform in 2007. These periods are constructed with reference to central events, interventions, and changes in power dynamics between the main agents and positions. The two main historical positions are identified as the biomedical (orthodox) and a more psychosocial (heterodox) position. A discussion

then follows of each period, based on key elements of Bourdieu's field concept. Finally, we relate NR to its boundary fields.

Methodology

The theoretical approach is inspired by Bourdieu and Wacquant's concept of field (1992), which they describe as an analytical mind-set, consisting of a configuration of objective relations between positions. The relational force between the positions generates internal dynamics and defines the structure of the field. Wacquant and Akcaoglu (2017, 62) clarify the relation between Bourdieu's concept of social space and field in the following manner: *social space* is the mother category, whereas *field* is a specialized social space if it "becomes sufficiently demarcated, autonomized, and monopolized".

Bourdieu operates with open concepts in order to break with positivism, thus he does not operate with clear definitions or methodological guidelines. In order to operationalize the concept of field, we have consulted Broady's (1998) rules of thumbs. Of these, the following areas are especially relevant for our analysis: The structure of the field defined by polarities; a space of possibilities and its homology with the social space; doxa (own beliefs) and own institutions. Bourdieu's approach includes identifying conflicting relationships and heterodox positions struggling for recognition and challenging the orthodox (traditional) positions; symbolic violence; discussing specific logics, doxa, and symbolic economies (capitals) distinctive within NR; and evaluating the degree of relative autonomy in the sense of inside steering versus outside dominance from external fields (Bourdieu and Wacquant 1992). External dominance might for instance be exerted from forces within the political (or bureaucratic) field with demands of reporting, instructions to be followed, guidelines, and economic framing such as rates based on diagnosis-related groups (DRG's). These Bourdieuan concepts are then applied as analytical tools supported by a conceptualization of rehabilitation in late modern society (Hanssen and Sandvin 2003) hence vertical and horizontal pressures on rehabilitation practices. We will not conduct a fully-fledged field analysis based on a correspondence analysis of quantifiable data on types and volumes of capitals etc. This is in line with Wacquant and Akcaoglu (2017) who argue for a less rigid and method-defined way of analyzing fields and subfields. Unlike conventional historical analysis, we will not create a linear progression of events, but will rather focus on the struggles and forces in the field. Each section of this analysis focuses on developments that emerge as alliances and / or conflicts between positions, which then claim authority based on their differing capital (e.g. cultural, economic and social) in NR.

The initial identification of central historical agents and events was provided through a document review strategy of the 'anthropological composition' of NR (Løvschal Nielsen 2004) on various agencies in NR, including hospitals, rehabilitation institutions, and user organizations. This, along with the sociological work of Delica (2007) was used to identify the administrative and organizational changes for professionals working with persons with brain injuries. This created the basis of the two analytical periods (1 and 2) based primarily on primary and secondary texts, as well as a historical perspective presented in more current political documents.

This revealed that NR was an area of increasing political interest (and steering). A second purpose of this first review process was therefore to identify political documents in order to identify the main political authorities in these early two phases of NR. This identification of central political authorities was continued by a second review based on the two most recent disease management programs published by two different political authorities (the Danish Health Authority and Danish National Board of Social Services) in NR, as well as an audit from the National Audit Office of Denmark (NAOD). This was undertaken in order to identify relevant current political documents (legislation, announcements, guidelines, reports) and authorities, as well as creating an overview of changes in political intervention throughout the years. This second review formed the basis of constructing period 3. The documents identified through both the first and the second review process were further classified and selected according to the following criteria: (1) documents representing the public sector for the whole country concerning brain injury service provision for adults; (2) documents issued from political and professional authorities; (3) documents related to the rehabilitation of *acquired* brain injury; (4) documents concerning adults. General legislative documents (for example changes in health legislation) were excluded despite their possible influence on NR. In total 31 political documents were located (marked with (*) in the list of references). A systematic approach, as described by Kropp (2009) and Delica and Mathiesen (2007), was applied to form the basis of the registration of the documents.

We registered the same information per document: year, author, type of document, objective/purpose, target group, the context of the document, and potential impact on NR. Three key documents were selected for further detailed analysis aimed at exploring the dominant social positions from a contemporary perspective in period 3. The three documents were selected because the overview of documents revealed these were authored by the primary authorities in NR representing different approaches and being the most contemporary, comprehensive as well as regu-
lative published. The documents are:

- National Board of Health (2011) “*Brain Injury - A Health Technology Assessment*” (HTA)
- Danish Health Authority (2011) “*Disease Management Program of Rehabilitation of Adults with an Acquired Brain Injury*” (DMP) [Author’s own translation]
- Danish National Board of Social Services (2016) “*Disease Management Description: Rehabilitation of Adults with a Complex Acquired Brain Injury – In the most Specialized Social and Special Teaching Area*” (DMD) [Author’s own translation]

Period 1: The genesis of neurorehabilitation

As recently as the 1970s, the dominant understanding of neurology was that brain tissue was not repairable, and therefore a brain injury was considered more or less a permanent condition.

It was not until the 1980s that it was recognized that the rehabilitation of people with brain injuries is possible [...] Earlier, efforts directed towards this patient group were characterized by a high degree of pessimism. The majority of brain-injured individuals were given no training. [Author's own translation] (National Board of Health 2011, 72)

Prior to the 1980s, the main treatment plan was testing the brain-damaged person, making a diagnosis, and offering care, while the training of cognitive functioning was not an objective and was instead perceived as futile. On the whole, there were three types of institutions treating patients with brain injury: somatic hospitals, psychiatric hospitals, and physical-medicine hospitals or clinics. After discharge from hospital, only a few institutions were involved in the treatment of people with brain injury, and instead most people were referred to nursing homes for the elderly (or younger physically disabled) or physically placed among the mentally ill. Training was primarily carried out by therapists who based their approaches on orthodox therapeutic principles, while nurses were in charge of caring. At physical hospitals, physicians (and physiotherapists) were responsible for medical training, and social counselors assisted in managing hospital discharge, education, and job training (Løvschal Nielsen 2004).

During the 1970s, the medical orthodox position was challenged by neurologists in several countries, most notably the Soviet Union, Germany, and the USA. They possessed embodied cultural capital (e.g. medical language usage and natural science codex) acquired from medical education (institutionalized cultural capital) (Bourdieu 1986), which was transformed into new theories and research about the brain. The Soviet neurologist and psychologist Alexander Luria (1902 -1977) was one of the pioneers in neuropsychology. Luria was educated in both medicine and psychology, his father a professor of medicine and his mother a dentist (indicating that he came from a cultural elite in Russia). He was famous for integrating neurology and psychology (with pedagogical inspiration from his cooperative work with Lev Vygotsky) (Homskaya 2001). Lurias' approach considered psychological processes in the nervous system to be *social* and *cultural* in their origin and structured through speech; he claimed that it was the influence of the outside world that made the brain into a complex functioning system (Luria 1972). The main purpose of this perspective was to situate the individual in a cultural and social context. In addition, Polish-German scientist Kurt Goldstein (1878 – 1965) was educated in medicine and held positions as a neurologist and a psychiatrist. He is known for his creation of a holistic theory of the organism aimed at people who acquired a brain injury during World War I (Goldstein 1939). He pioneered the creation of a coherent treatment system and brought this knowledge to New York, where this neuropsychological approach was further disseminated (Teuber 1966). Scholars from the USA, Switzerland, and Germany started applying therapeutic methods and pedagogical principles that challenged the biomedical approach. This challenge was also directed at scientific methods where neuropsychological experiments were being

rejected by the medical position and instead explained as spontaneous recovery (Teuber 1966; Løvschal Nielsen 2004).

The neuropsychologist Anne-Lise Christensen and her colleagues introduced this neuropsychological approach to Denmark in the 1980s. They conducted experiments on the treatment of people with brain injury, utilizing an interdisciplinary and comprehensive approach. These treatments involved sociocultural relations by providing training in everyday life matters and relationships, and including pedagogical approaches. This was met with distrust at the medical hospitals in Denmark, representing the orthodox position, as it was considered non-objective in nature and therefore invalid (Christensen et al 1989; Christensen 2013; Løvschal Nielsen 2004).

The challenge of providing legitimate research results for these newcomer rehabilitation approaches (heterodox positions) to brain injury within biomedical research traditions was also addressed by the County Council Association (1991), which at the time related to the limited resources provided for these new treatment and research forms.

A further branching out of new approaches challenging the relations of dominance followed these neuropsychological breakthroughs. These applied to larger groups of patients and continued to break with traditional biomedical approaches well into the 1990s. Examples of areas where these cultural/theoretical advances were converted in clinical practice are: speech therapy, special education, psychotherapeutic and pedagogical principles and approaches. The *Therapie Zentrum Burgau* in Germany influenced some of these therapies, with its principles of early intervention for retraining, a multidisciplinary approach, and the use of specific training models (such as neuro-developmental treatment). These rehabilitation approaches were brought to Denmark and were practiced in multidisciplinary teams that challenged the monopolistic practices of medical doctors (Kjærsgaard 1993; Løvschal Nielsen 2004). This change in practice was helped along by increased knowledge regarding brain plasticity, which also inspired the development and trial of new treatment paradigms (Borg et al. 2011). General clinical practice was relatively stable during this period, but inspiration and theories from psychology and pedagogy started to shape preconditions and inspired both individuals and institutions to rethink their practices for this group of patients (Angelsø and Smed 1980). Interventions were for the most part still fragmented, patchy, and individual based however (County Council Association 1991). To sum up, the genesis of NR was a product of new ideas and knowledge, involving various struggles among professions such as medical doctors constructing the orthodox position and professions such as neuropsychologists, speech therapists, special education teachers and psychotherapists taking a heterodox position.

Period 2: Institutionalization of neurorehabilitation

In the 1980s, structural changes at the political level led to struggles concerning the classification and identification of individuals with brain injury as a 'new' patient group, as well as a selecting of responsible institutions for providing services. The running of the state social care system was delegated to county authorities, which

were tasked with the care of all disabled persons (National Board of Health 2011). This led to long-lasting negotiations, concerning which political authorities (social or health) should be responsible for brain injuries, as well as whether this kind of disability should be considered a physical or psychological handicap (County Council Association 1991; Feiring 2016). This period is characterized by a jostling for positioning in defining how the injured brain should be conceptualized and approached, how doxa should be defined and which kind of symbolic capital should be valued in NR. This search for common principles can be considered a formation of a subfield³ (Gorski 2013).

The heterodox position based on neuropsychological and pedagogical approaches to brain injury was manifested and materialized with the establishment of the two rehabilitation centers in 1985: Vejle Fjord Rehabilitation Centre, and the Centre for Rehabilitation of Brain Injury. The latter was privately funded and established at the University of Copenhagen's psychology department, rather than at the Copenhagen University Hospital, where this new approach met resistance from medical professors (Løvschal Nielsen 2004). The psychological department was the first institution of its kind in Europe, anchored in neuropsychological methods. Besides neuropsychologists, the staff included speech therapists, physiotherapists, occupational therapists, and special teachers, thus providing an interdisciplinary and comprehensive approach (Christensen 1984; Christensen 2013). Vejle Fjord Rehabilitation Centre was a specialized hospital with a history of offering treatment for specific illnesses over the years depending on demands. They offered interdisciplinary practice where treatment combined psychotherapy with cognitive rehabilitation, physical and occupational therapy, and work training (Vejle Fjord 2018; National Board of Health 2011).

In the years following their foundation, another five public post-hospital rehabilitation centers for individuals with brain injuries were established and organized at a county level and approved by the Ministry of Social Affairs. The inclusion of socio-psycho-cultural dimensions as well as the inclusion of the physical surroundings (e.g. the natural surroundings as part of the rehabilitation in some of the centers) across these rehabilitation centers differed from previous treatment programs, which focused solely on the injured biological body and brain, within traditional (somatic) hospitals in the general medical and neurological departments (National Board of Health 2011; Christensen 2013; Vejle Fjord 2018).

A national knowledge center for brain injury was established in 1994 in order to support the counties, by collecting, processing, and communicating information and knowledge. The knowledge center represented the new heterodox approach, expressed through the production of knowledge and expertise via websites, databases, courses, the creation of county brain injury teams, a magazine named *Fokus*, projects and funding in collaboration with the Ministry of Social Affairs. Overall, this new knowledge center contributed to increasing new knowledge on NR, in relation to brain injuries, regarding psychological, pedagogical and social aspects. On the international scene, the Danish knowledge center played a significant role, arranging conferences and seminars that attracted prestigious collaborators (Andersen 2006; IBIA 2019; Løvschal Nielsen 2004)⁴. During the 2007 local government

reform, the knowledge center was transformed into what is now known as VISO⁵: a national knowledge and specialist consultancy (but with no decision-making authority) in relation to social areas and the education of special requirements for all kinds of handicaps. VISO continues to be run by Danish National Board of Social Services (Ministry of Social Affairs 2006; Andersen 2006).

The seven new neurorehabilitation centers for patient treatment and the national knowledge center increased the power of the heterodox position under the social authorities. This was further strengthened with the establishment of Danish Neuropsychological Society (DNS 2018) in 1988 and Danish Neuropedagogical Society, (DaNS 2018) in 2001, both of which are communities for professionals.

After almost 20 years of consolidating the heterodox positioning by an increased number of agents and institutions as well as a re-establishing of educational capital and practices, the orthodox position underwent a revival around the year 2000, especially with the establishment of two specialized hospital units with nationwide coverage (Danish Health Authority 1997). The biomedical approach was materialized in hospitals under the health authorities. However, these hospitals included more professionals in e.g. psychology and social pedagogy than at the previous traditional somatic hospitals. In addition, several mono-professional societies (psychologists, physiotherapists, nursing and occupational therapists) with a focus on neurorehabilitation had expanded their mandates with course activities and education services. Also, patient preferences, needs and wishes for the future received much greater focus in both hospital-based and municipal rehabilitation (Andersen 2006; Løvschal Nielsen 2004; VCR 1988). This may all be seen as an example of the growing recognition of heterodox approaches and a gradual transformation of the traditional treatment of the brain injured. The medical positioning within NR was further strengthened in 2007 by the establishment of a medical professorship in NR at the University of Aarhus, constituting symbolic capital. This also reinforced the production of scientific research on NR based on biomedical research traditions (National Board of Health 2011).

The voices of patients and their affected relatives were also further institutionalized and strengthened over the years through the establishment of user organizations. Since 1985, people with brain injuries have been unified as one group of disabled, represented by user organizations. User organizations in Denmark have increasingly been strengthened due to legislation providing them with increased power and involvement in the development of new legislation and initiatives (Bonfils and Bangshaab 2012), as well as a reinforced international cooperation (Froestad and Ravneberg 1991). User organizations have lobbied for the opinions and experiences of patients and their relatives to be taken into account, as well as for more social-oriented approaches. Another increasingly active and powerful agent representing patients and relatives is the media (Danish Regions 2011). The media has questioned the organization of NR services and generated an increased focus on patient (and relatives) perspectives (DR1⁶ 2012). In addition, trade unions also entered into the NR discussions in the 1980s because of brain injuries caused by solvents. These agents provided services/interventions outside the hospital with a much greater focus on social and cultural dimensions, which have influenced

treatment and rehabilitation (County Council Association 1991). Moreover, additional political organs were established, such as DUKH, the Impartial Consultative Service for People with Disabilities, an institution under the Ministry of Social Affairs established in 2002, operating as a consulting service which offers impartial support for the disabled and people around them (DUKH 2018). These groups and societies have played an important role in drawing NR towards their agendas (Borg *et al.* 2011).

Correspondingly, arenas for co-operation and fusion of divergent authorities and other agents and appertaining logics are evident. An example is a white book from 2004, which is a Danish translation and interpretation of the World Health Organization's (WHO) conception of health and disability, and is thereby embedded in a health/medical context (WHO 2002). The collaborators creating the white book were different professional societies and corporations, who defined the deliberate national framing of rehabilitation approaches in Denmark. Notably, the Ministry of Social Affairs is the only national-level political authority represented in this context, as the Ministry of Health is absent (although the health and medical position is still strongly represented by professional societies and institutions). This may have left space for an interdisciplinary and comprehensive approach to rehabilitation, which is also expressed by the white book's emphasis on the International Classification of Functioning, Disability and Health (ICF) (Marselisborg Centre 2004). The ICF is promoted as a biopsychosocial model aiming to unite biological, psychological, and social approaches and thereby create a more composite understanding of illness and disability (WHO 2002). Not only did ICF provide a common language for the increased number of professionals working in NR, but it also helped generate a broader understanding and increased attention on rehabilitation (Schröder and Schultz Petersen 2012). This all increased the autonomy of the sub-field of NR (Gorski 2013).

Period 3: Political restructuring of neurorehabilitation

In 2007, a reform of the local government structure was implemented in Denmark, which gave the responsibility for NR (following hospital treatment) to the 98 municipalities, instead of the 14 counties. This decentralization of rehabilitation services, together with changes in the Health Act in 2006, gave a more health-oriented responsibility and authority to the municipalities. In addition, the position of disabled citizens was strengthened because of changes in legislation, making it compulsory for the municipalities to consult people with disabilities and their associations about policies and services (Ministry of Interior and Health 2005; Bonfils and Bangshaab 2012).

The government reform also occurred at the time of the global financial crisis that struck the country. This led to cost-cutting in the public sector and contributed to the reduction of a number of specialized rehabilitation institutions that had long-term experience and skills and were previously run by the counties. According to the regional authorities, this weakened the knowledge base and led to de-specialization of NR services (Danish Regions 2011). One response to this criticism has been the increased state regulation of NR, primarily from the Danish Health

Authority (e.g. documents concerning knowledge and practices) and a demand for research-based practices (National Board of Health 2011; Danish Health Authority 2011; National Board of Social Services 2016). This increased state involvement became visible in the overview of documents we found during the review process showing that the total number of publications had increased throughout the years with an additional boost after 2007. The majority of documents were published by political health organizations, showing that these have played a central role (both before and after 2007). The political health organizations primarily consist of the Ministry of Health and the Danish Health Authority (itself consisting of many professionals with medical backgrounds). The former prepares legislation relating to the work of healthcare practitioners, whereas the latter is the author of the Health Technology Assessment and Disease Management Program. The political social position was first recognized through documents published by the County Council Association and more previous by Danish National Board of Social Services taking over authority from the counties after 2007. Additionally, the total number of political authorities (those concerning employment and special education) increased after 2007. We suggest that this increased activity of social political authorities as well as the increased total number of active political authorities likely came with an enhanced understanding of the complexity of the disability, hence the interventions as well as the need of a multidisciplinary approach. The involvement from social and educational authorities maintained a focus on the life conditions of those with brain injuries, ways of living with the disabilities and a greater need for cooperation (e.g. County Council Association 2016; Danish National Board of Social Services 2016).

One of the central documents representing the health authorities ‘The clinical guideline, Health Technology Assessment (HTA)’ is described as a systematic, critical, and comprehensive report based on research in order to find the ‘best available evidence’ for treatment. The project group behind the Health Technology Assessment consists of practitioners (from hospitals, the Centre for Rehabilitation of Brain Injury, and municipalities), universities, and the Danish Health Authority: hence altogether a strong representation of medical/health-oriented agents (e.g. via different medical societies). Within the HTA, the biomedical and positivistic methodology (e.g. the notion of knowledge gathering, systematic literature reviews, and economic calculations) where evaluation of effects, quantitative studies, and evidence-based interventions are given a seal of approval. In comparison, the neuropsychological and holistic interventions are referred to as a more doubtful approach: ”There is weak to moderate evidence for effect of multidisciplinary rehabilitation programs in the form of holistic neuropsychological programs in the sub-acute/chronic phase” [Author’s own translation] (National Board of Health 2011, 12).

Despite the HTA’s approval of biomedical treatments and standards, the document claims to be based on the ICF with its biopsychosocial approach and the need for a more comprehensive approach in neurorehabilitation “including assessment of the need of the citizen’s need for interdisciplinary rehabilitation, hence physical,

cognitive, emotional, pedagogical and social aspects” [Author’s own translation] (National Board of Health 2011, 203).

The ‘Disease Management Program’ is based on the Health Technology Assessment and is a service guide for practitioners. The author group behind the Disease Management Program primarily represents scientific and (medical) professional societies, political authorities (Danish regions and municipalities), and user organizations. Despite the interdisciplinary group behind the Disease Management Program, the political health authorities and professional medical societies are most strongly represented. However, compared to earlier documents from the Danish Health Authority (for example Danish Health Authority 1997), the author group behind this Disease Management Program opened up to also include agents representing more psycho-social approaches (e.g. represented by VISO and Centre of Brain Injury) and political authorities, as well as the increased number of different participants. This diversity has left its mark with attempts towards a comprehensive and social-oriented approach (for example in the interventions described). Examples of this are an increased awareness of the social aspects of disabled life, such as communication, occupation, relations, etc.

The Danish Health Authority has also channeled economic resources to NR via SATS-funding.⁷ In 2011, NR was provided 150 million DKK over a four-year period to strengthen the municipalities, in order to increase their knowledge and the specialization of NR services. In 2012, 100 million DKK was provided to strengthen the regional interventions for young people with an acquired brain injury (National Audit Office of Denmark 2016). This is evidence both of the increased involvement from the political and economic field in NR from 2011 onwards and of how NR is being politically viewed as an area of health with the Danish Health Authority as a distributor.

In 2016, the National Board of Social Services published the Disease Management Description. This document was developed in cooperation with political actors at national, regional and municipality levels, with divergent knowledge profiles. Four different authorities were included, representing employment, education, health and social relations, and rehabilitation centers; while the professional experts were mainly represented by therapists and neuropsychologists, as well as a few with a pedagogical and medical background. The user organizations were represented in an end-user stakeholder group. A psycho-social approach is predominant in this document, where user involvement, neuropedagogy, and neuropsychology are seen as preparing the ground for cooperation between institutions and professionals. Despite a relatively small medical representation, the Disease Management Description is based on the Health Technology Assessment, the Disease Management Program and previous statements that reveal underlying biomedical logic: “The National Board of Health recommends that efforts are knowledge-based. That is, the highly specialized offers and knowledge environments’ systematic documentation of the evidence of the methodological effect” [Author’s own translation] (National Board of Social Services 2016, 7).

Biomedical terminology is also evident in the use of terms such as *disease* (with implications of diagnosis), rehabilitation post *hospital* (where the clinical hospitals

are considered the dominant arena), and a focus on the *individual body* and the diagnosing of its *functional capacity*. However, the professional approach reveals its foundation in a more heterodox tradition with ‘neuropedagogy’ and ‘neuropsychology’ being appointed their own sections in the document (National Board of Social Services 2016). The representation of universities also shows the increased requirement to legitimize knowledge.

The supplying of economic capital to NR through the social political authority dates back to before the political restructuring in 2007. In 1998 55 million Danish kroner was allocated to the area of brain injury through SATS-funding administered by the Ministry of Social Affairs (Andersen 2006). This shows that NR was politically considered a *social* area in the beginning, and not until many years later (predominantly from 2011 and onwards) was it considered and prioritized as a health area.

The increased political intervention, prioritizing and investment in NR can be explained due to the internal strengthening described in the section of the institutionalization of NR but also due to better technology and treatment possibilities, better outcomes for patients and therefore also extended cost for the welfare state because of treatment and care.

DISCUSSION

The entering of a heterodox position

The primary historical positions have been constructed as a biomedical (orthodox) position and a psycho-social (heterodox) position, representing an interdisciplinary and comprehensive approach. The dominant biomedical agent’s definition of symbolic capital represented what was appreciated in NR, hence what was required by the heterodox newcomers (Bourdieu and Wacquant 1992). The most validated heterodox agents (e.g. Luria and Goldstein) held symbolic authority because of their possession of symbolic capital - primarily cultural capital (being educated medical doctors and therefore understanding the embodied knowledge of medicine such as the biomedical language, classifications, theories, etc). This was of importance for the power they were able to claim and their ability to gain influence. In a Danish context, the NR pioneers also possessed convertible capital. Anne-Lise Christensen, for example, held valuable social capital (her husband being a university professor with family ties to the Egmont family and foundation; educated in prestigious institutions and milieus such as the University of Harvard and later with Luria (Christensen 2013)), which she transformed into economic capital (a donation from the Egmont foundation) to found the first Centre for Rehabilitation of Brain Injury. The new agents holding a heterodox position led to internal struggles for power with orthodox agents (Løvschal Nielsen 2004). An area of conflict was the different knowledge held by medicine and psychology of science. Specifically – new scientific knowledge challenging experiments and RCTs⁸ by applying interpretative case study approaches for analysing underlying factors and behavioural disorders (Christensen et al. 1989). Luria and his colleagues’ well-known case study of a man with traumatic brain injury (TBI), “*The Man with a Shattered World*” (Luria 1972),

is an example of a heterodox scientific study. Despite this, biomedical research standards functioned as a validation of the dominant actors and delayed the uptake of the new ideas. In a Bourdieuan understanding, this can be considered inertia contributing to consecration of doxa and the preservation of the hierarchy (Bourdieu and Passeron 1977).

A fusion of biomedical and psycho-social logic?

The institutionalization of NR with the seven treatment centers, the national knowledge center and the establishment of professional knowledge societies (e.g. DNS and DaNS) was a recognition of the new heterodox knowledge on brain injury. At the same time, this new knowledge represented a threat to the social order where the biomedical agents with its orthodoxy were dominant. This recognition also opened up for an increased number of professions to compete for a share of the rehabilitation practices, creating pressure from within NR (Hanssen and Sandvin 2003). These various practices and knowledge combined in NR can be viewed as – to some extent – a compromise between the orthodox and heterodox positions e.g. manifested in the white book based on the International Classification of Functioning, Disability and Health (ICF). NR opening up for multi- and interdisciplinarity can be viewed as a share of power between positions, and a change in focal point from the sick body to living a life with disabilities. This gradually opened up the closed doxa. Though the ICF, (in contrast to its predecessor ICIDH 2) claims to be a comprehensive framework, the ICF is still a tool for measurement and standardization, based on diagnosis and functioning (Bickenbach et al. 1999) in line with a biomedical approach. Therefore, the ICF may be viewed as a compromise of psychosocial and biomedical logic. Moreover, in documents published by the political social authorities, the biomedical doxa is still present in the discourse. This can be considered symbolic violence where biomedical logic is accepted by both neuropsychologists and social pedagogical agents: for example in referring to the biopsychosocial model of rehabilitation. Despite the opening up for psychological and pedagogical knowledge, NR is still a practice dominated by biomedicine. This inertia in the field can be connected to Bourdieu's concept of habitus (Bourdieu 1996b) providing us with an understanding of stability in the area since this is inherent in the material structures, in institutional structures and in the body as structures of perception and action. We could also argue in line with Hindhede and Larsen (2018) that relations between a number of sub-fields create a complex network that connects and stabilizes NR (subfields of institutions, subfields of professions, subfields of diseases, subfields of technology, etc.). Each of them operates with relative autonomy within a broader medical field, and as such they constitute a structural homology.

Biomedical domination – an alliance with the political field?

The political reform in 2007 can be viewed as a restructuring of professional services including de-specialization. It can however be argued that medicine regained its position in an alliance with the state after 2007 and that the biomedical domination is still present, although in a new representation. This is because biomedical

standards and approaches are reflected in methods and terminology that are still applied in policy documents, as well as medical professionals being central actors and authors in creating these documents. To exemplify this, the Health Technology Assessment addressed the importance of evidenced-based medicine and practices, while maintaining that there was only weak to moderate evidence for neuropsychological programs (National Board of Health 2011). The actors behind the Disease Management Program are heavily represented by professional medical societies and hospitals. Therefore, a question arises as to whether the evidence-based practices of biomedicine re-established their dominant position in alliance with the health authorities through the increasing standardization and monitoring of the services. This alliance was driven by many different actors such as representatives of user organizations, health professionals and health authorities with an interest in standardized trajectories in order to enhance the quality and cohesion for all. This was done through public hearings and participating in the developmental work facilitated by the Danish Health Authorities.

It is possible to argue that there is collaboration between the left and the right hands of the state (Bourdieu 1998) due to the new alliance created between the medical professions, evidence-based medicine, and governmental monitoring. This is in line with Pinell and Jacobs' (2011) way of analyzing how biomedical dominance relates to 'other' areas outside medicine. We therefore state that despite an increased power of the professionals representing a psycho-social approaches as well as a strong state intervention in NR, it is still the medical profession that has the power to set the agenda in NR.

Relative autonomy – internal principles or external steering?

Bourdieu claims that an analysis of a field also involves positioning in relation to other fields (Bourdieu and Wacquant 1992). Inspired by *The field of cultural production in the field of power and in social space* (Bourdieu 1996a), figure 1 is an illustration of NR and its demarcation in relation to the surrounding fields in social space. In line with Bourdieu (1996a), this meta-figure is not based on statistical data (specific indicators of types and volumes of capital) but is a reflection of previous analysis, and hence a synthesis of capital possession of the primary agents and authorities as well as their involvement and success with setting the agenda also explicated throughout the analysis. In other words, the figure is considered a tool to illustrate graphically the interpretation of historical material.

The illustration shows that NR both prior to 1980 and after 2007 is considered a part of rehabilitation, constructed as a specialized subfield of the field of medicine and is also to an increasing extent framed by the political field (as can be seen in Figure 1, also simplified to include the field of economics). The movement of NR away from the field of medicine is explained by its opening up to humanities and social sciences, including psychology, pedagogy, therapy and social care, as well as interdisciplinary rehabilitation approaches (a combination of treatment, education, care, and work training). Today, NR has grown in size due to more patients surviving, technologies, clinical intervention possibilities, greater knowledge, and a higher political prioritizing, hence investment, in combination with the search for

common principles (for example the white book) and common forms of organization (cf. the section of “the institutionalization of NR”) (Gorski, 2013). The figure also shows that NR has moved from being relatively autonomous to more influenced by other fields (thus less autonomous), primarily due to the increased political and bureaucratic fields (steering on an organizational and practical level, such as through guidelines, legislation, etc.)

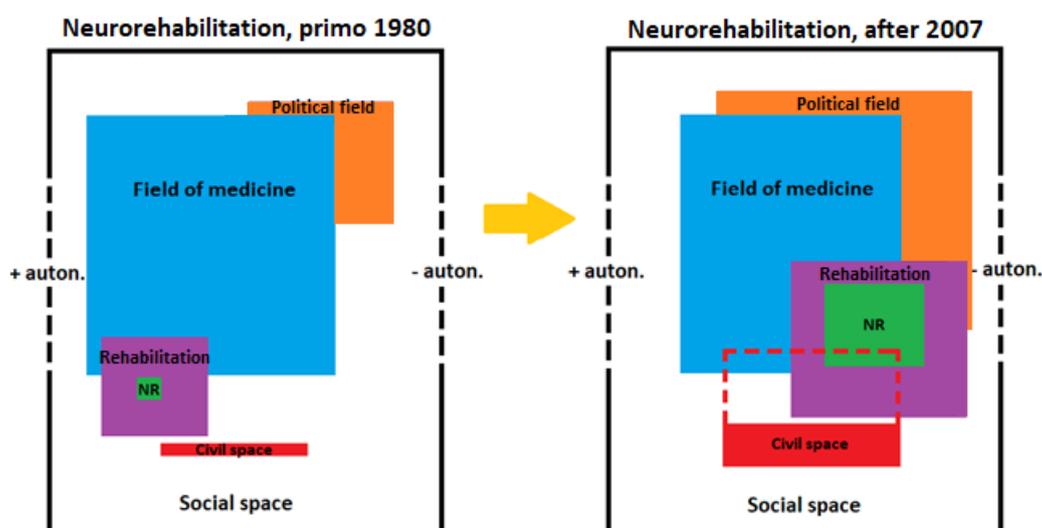


Figure 1: *The position of NR and its demarcation in relation to selected, surrounding fields, focusing on the relative autonomy of NR in the beginning of the 1980s and after 2007. The surrounding fields are constructed in terms of volume after the estimated influence on NR and the vertical line illustrates the hierarchy of dominance on NR.*

A turning point leading to changes in the structure and autonomy of NR occurred in 2007, due to a change of relational power with the allocation of increased authority to the municipalities. This political intervention challenged professional logics and weakened the relative autonomy of professions in NR. A consequence of the increased control of NR by the state was the increased use of technologies of governance: for example, the Disease Management Program (2011) from the political health authorities, which represented a new form of governance in which documents proposing knowledge recommendations for practices were published. The state thereby replaced the traditional governance of NR (primarily governing through structural changes) with a new form of governance at a distance, by applying political technologies (Rose 2009). This created an increased pressure from above (Hanssen and Sandvin 2003). Also, the audit report by the National Audit Office of Denmark (2016) examining ministerial duties, and concerning the strengthening of NR interventions can be viewed as a massive political steering of an area. A natural consequence of this increased political control has been a loss of relative autonomy, however, relative autonomy was also challenged by increased influence from other agents, such as civil actors. The term civil space unites patients

and relatives, user organizations, as well as different forms of media. Civil space, as a 'player' has increased its authority due to changes in legislation, new trends, increased user involvement, cultural capital among the leading positions of the user organizations (convertible to symbolic capital in NR), and stronger organizations in general. This created a pressure from below (Hanssen and Sandvin 2003) which also challenged the relative autonomy of NR. To sum up, the increased domination especially from the political field from 2007 onwards but also from other fields/spaces such as e.g. the civil space entailed a reduced relative autonomy of NR.

This constructed and illustrative positioning of NR indicates that it is a subfield dragged in different directions and hereby constantly changing its structure (Bourdieu and Wacquant 1992).

Conclusion

This Bourdieu inspired field-analysis was approached by the categorizing of three constructed periods: *the genesis of NR* until the 1980s, where biomedical agents such as medical doctors struggled to conserve the orthodox position against a new heterodoxy (e.g. represented by professions such as neuropsychologists, pedagogues, speech therapists, special education teachers) breaking through due to central agents managing to convert their capitals to symbolic capital; *the institutionalization of NR* from around 1985-2007, where this heterodox knowledge was materialized in new specializations of rehabilitation practices, services, and institutions; and *the political restructuring of NR* in DK after 2007, characterized by increased and state dominated interventions. NR was transformed from being a relatively self-steering subfield with a biomedical doxa to being a heteronomous subfield characterized by psycho-social and comprehensive approaches also reflected in doxa. This makes NR a multi- and interdisciplinary practice characterized by heterogeneity, although with growing homogeneity in clinical practice due to an increased number of NR institutions, and later political guidelines entailing a formalization of treatments. Despite the increased power of psycho-social and comprehensive approaches, biomedical knowledge is still dominant and reflected in doxa. This is due to an alliance between the state and the medical agents both interested in standardized practices such as evidence-based medicine, and research methods based on bio-medical principles (e.g. RCT-studies). Furthermore, we have shown how external involvement has increased, especially with the local government reform in 2007 where the political (and economic) fields have increased their influence substantially, but also the field of civil agents (e.g. patients and user organizations) has increased their influence. This increased influence from external fields has reduced the relative autonomy of NR. This constructed outline of the history of NR in Denmark has shown that the subfield has a relatively short history with many interests and large transformations all contributing to complexity.

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Notes

- ¹ The Local Government Reform (also named the structural reform) is a political reorganization of the entire public sector in Denmark where the municipalities were reduced from 271 to 98 and five administrative entities at a level above the municipalities and below the central government of the public sector (regions) replacing the 15 counties.
- ² On the use of Bourdieu's field concept in historical studies, see the relevant contributions in Gorski 2013.
- ³ For further elaboration on the notion of subfields, please see Bourdieu 1996a, 120-24.
- ⁴ An example of the knowledge center's noteworthy contributions was the arranging of the first world conference on brain injuries in 1995 in cooperation with the International Brain Injury Association (IBIA) (IBIA 2019).
- ⁵ VISO is an acronym for National Knowledge and Special Consulting Institution regarding social affairs and special needs education.
- ⁶ DR1 is an independent public Danish TV Channel under the Ministry of Cultural Affairs fully financed through license fees.
- ⁷ SATS-funding are yearly economic resources provided to chosen areas in the framing of vulnerable group of people decided by the political parties and canalized through a selected ministry. Despite of the economic capital investment this provides to an area it also witnesses a symbolic investment by expressing the relation of dominance in this subfield hence interventions and political responsibility of this group of people.
- ⁸ Randomized control trial is a recognized and striving type of scientific (often biomedical) experiment which aims to reduce bias when testing a new treatment.

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Appendix I: Overview of references constructing the three periods

Time periodes	Primary professional academic texts	Secondary sources	Primary political documents	Primary texts from homepages/medias
Period I: The genesis of NR in DK	Christensen, 1984 Christensen, 2013 Goldstein, 1939 Kjærsgaard, 1993 Luria, 1972	Borg et al, 2011 Homskaya, 2001 Løvschal Nielsen, 2004 Teuber 1966	County Council, 1991 National Board of Health, 2011	
Period II: Institutionalization of NR	Angelsø and Smed, 1980 Christensen, 2013	Andersen, 2006 Bonfils and Bangshaab, 2012 Borg et al, 2011 Delica, 2007 Feiring, 2016 Froestad and Ravneberg, 1991 Gorski, 2013 Løvschal Nielsen, 2004 Schrøder and Schultz Petersen, 2012	County Council, 1991 Danish Health Authority, 1997 Danish Regions, 2011 Marselisborg center, 2004 Ministry of Social Affairs, 2006 National Board of Health, 2011 WHO, 2002	DANS, 2018 DNS, 2018 DR1, 2012 DUKH, 2018 IBIA, 2019 Vejle Fjord, 2018
Period III: Political restructuring of NR		Andersen, 2006 Bonfils and Bangshaab, 2012	National Board of Social Services, 2016h Danish Health Authority, 1997 National Board of Health, 2011 Danish Health Authority, 2011 Danish Regions, 2011 Ministry of Interior and Health, 2005	