

Constructing the Alzheimer Patient: Bridging the Gap between Symptomatology and Diagnosis

Marion Droz Mendelzweig

Identifying a tipping point that might draw a distinction between normal and pathological ageing is a difficult task. This paper reviews various steps that lead to establishing a diagnosis of dementia disorders as it is done in a memory clinic. It analyses the way different data is collected in the patient's daily life. The steps, including a patient's neurological status, neuropsychological tests and MRI, are interwoven with regard to identifying Alzheimer's disease. The mild cognitive impairment category that emerges from this process appears as a grey zone, useful to the practitioners and patients despite the controversies underlying the concept. By questioning the performative dynamic stemming from the encounters between patients with cognitive concerns and professionals, this paper intends to find out how this activity contributes to the standardization of the disease outlines, and how this process contributes to separating ageing signs from a pathological way of becoming aged.

Keywords: Alzheimer's disease, ageing, diagnosis process

Alzheimer's disease (AD) does not constitute a distinct and clearly defined nosological category. Ever since 1908 and Kraepelin's introduction of the eponymous term into the catalogue of mental illness, confusion has reigned over what it designates exactly. Even if nowadays there is no longer any controversy about the distinction—for a long time considered pertinent—between AD and senile dementia, the clinical diagnosis of AD remains resolutely imprecise. Cautiously, psycho geriatrists rather use the term 'cognitive

disorders of Alzheimer's type,' while having to point out the impairments observed in patients. The pathological process leading to a state of dementia is devoid of clear and unequivocal clinical signs, while, so far, biological evidence can only be observed through an autopsy, and neuro imagery technologies are not yet routine techniques available for diagnosis. In addition, the degenerative process can be long and differs in its evolution from one individual to another. To non-specialists, the representation of the disease refers to its more

advanced stage, when the cognitive impairments are already obvious. In the collective imagination, the progressive disintegration of the self, implicated in the degenerative process, tends to stand for a distressing way of becoming old. In fact, the preliminary phase, characterized by mnemonic impairments, is usually considered by lay people as a normal consequence of age. Therefore, specialists are faced with the challenge of identifying a turning point capable of distinguishing a clearly normal ageing process from a pathological degeneration process of the neural mechanism. Nevertheless, the search for biological and clinical screening criteria has a paradoxical consequence: Dementia medicine—inasmuch as it constitutes a discipline specializing in research of cognitive impairments phenomena and in the treatment and/or management of such phenomena—tends to treat as patients people who do not necessarily consider themselves to be ill. The search for signs and data capable of objectifying an ongoing degenerative process implies treating as potential future Alzheimer patients individuals who think they are normal old people.

Laboratory specialists such as neurobiologists and clinicians such as psycho geriatric physicians face difficulties in identifying the precise etiological starting point of the disease. The causal relationship between amyloid plaque—already identified by Alois Alzheimer himself—and the appearance of the disease has been challenged by research in the fields of neurobiology and psycho geriatrics alike. From tests on mice specifically designed to express the role of amyloid precursor proteins, it is now known that deficiencies in spatial memory are manifested well before the appearance of plaques (The

European Dana Alliance for the Brain, 2007). Moreover, it has been known since the 1930's that it is possible for plaques to be present in the brain without their necessarily developing the disease. The cross-reading of clinical observation and neurobiological research has only added further complexity by revealing that the shift into dementia, perceived as the combination of the crossing of a quantitative threshold (defined as the number of neurons presenting NFT (*neurofibrillary tangles*) and a qualitative threshold constituted by the number of regions affected (Schenk, 2004), is no longer valid. This realization resulted from observing—through the clinical tracking of people not presenting dementia symptoms and who subsequently permitted the autopsy of their brains—that the clinical symptomatology does not necessarily correlate with the presence of plaques in the cerebral cortex (The European Dana Alliance for the Brain, 2007). The appearance rate of biochemical indicators does not correspond to that of clinical symptoms. Thus, according to biomedical logic, the problem persists in its entirety. An effective cure or a specific preventive treatment for the disease remains unavailable as long as precise biochemical markers are not identified. The heterogeneous nature of the human brain, the variability in our vulnerability to ageing processes, the multiplicity of environmental and social factors susceptible to affect pathological developments and the diversity of factors that might cause handicap according to the particular social settings all constitute obstacles to the elaboration of a precise nosological typology of the AD pathology.

Millions of people throughout the world are afflicted by AD, and subsequently millions of others are indirectly affected

as members of a sufferer's family, carers, researchers, medical staff, etc. In addition, due to the ageing of the population, countless future elderly people already live in fear of having their cognitive capacities disappear before their death. A global anxiety is created through the junction between the visible ravages of the disease along with the alarming public health discourse. This climate is developing although the biological causes of the disease have not yet been defined. A category of patients awaiting the clarification of the etiological process and the apparition of pharmaceutical treatments is steadily growing. The social reality of the disease evolves diachronically along its biomedical reality rather than synchronously.

My intention in the following is to demonstrate, firstly, how in the absence of paraclinic support, dementia medicine fills the gap between symptomatology and diagnosis basing its assessment work on very ambiguous criteria; secondly, how it ends up labeling patients through a complex sorting process; thirdly, how it refines patient categories and standardizes the modes of identification and classification of levels of dementia despite the impreciseness of the diagnosis categories. Finally, I would like to demonstrate how, by the process of objectifying AD, senility is broken away from a normal way of becoming aged, thereby reinforcing public fear of becoming old.

Sources

The corpus on which this paper is founded was obtained from ethnographical observations in an ambulatory ward of a memory clinic located in the heart of a town in the French part of Switzerland. The memory clinic in question works

from the premises of an ambulatory ward. It constitutes a branch of the geriatric psychiatry ward of the canton's psychiatric hospital functioning as a teaching hospital. In the framework of its academic role, this service is submitted to a twofold responsibility: Achieving medical assessment of the patients' complaints about memory impairments, and collecting data likely to improve diagnosis procedures. From the very moment it is opened, the file for each patient presents a set of data entries recorded in codified ways so as to feed databanks and be suitable for comparison. Through their testimonies, the patients and their accompanying persons contribute unaware to the elaboration of medical knowledge and to the reality of AD¹.

Most of the time, the patients attending this memory clinic were referred to it by their GP. Before physically entering the ward, they already exist in its records through the nominal file, which contains personal data—such as their name, sex, age and address, and the GPs referential letter. This document provides information on the patient's somatic and psychiatric status to the medical staff of the memory clinic. Generally, for the sake of demonstrating the relevancy of their concern for their patient's cognitive impairments, GPs include in their letters information pertaining to the patient's past medical history, the medication he/she is used to taking, previously performed cerebral assessments through imagery, if any, as well as blood tests, etc. To some extent, for most of the patients, the great majority of whom are over 70 years of age, visiting the memory clinic is an additional step in their preexisting "patient's career."

For a period of four months, I observed the interactions between the medical

team and the patients of that service and their accompanying person. My objective was to understand how practitioners determine whether these patients showed normal mnemonic problems or possible pathologic signs. Therefore, we carried on non-participant observations of the different stages of the clinical investigations included in the usual setting of this clinic², namely:

- 7 first consultations, which consisted in a 60 minute of triadic interview confronting a medical practitioner³, the patient and a person of his/her entourage, followed by a 30 minute neurological examination conducted by the same physician.
- 5 heteroanamneses (inquiring into the patient's personal history and asking him/her to verbalize his/her complaint) confronting a nurse or a social worker⁴ and the patient's accompanying person⁵ in a 30-minute interviews.
- 1 session of 90-minute neuropsychological tests administered by a neuropsychologist.
- 7 weekly team meetings bringing together the entire medical staff, the secretary and the doctor in charge of the clinic. All patients files processed during the week were discussed at these meetings whereupon the diagnostic was established. This was the only occasion during the week when the entire memory clinic team members were reunited, namely two trainee physicians, one neuropsychologist, one nurse, one social worker, one geriatric psychiatrist and one secretary⁶.
- 7 restitution interviews, bringing together the practitioner who had conducted the first consultation interview, the patient, and his/her accompanying person. The goal of

this meeting was to communicate the diagnosis to the latter. If necessary, based on a decision taken at the team meeting, the nurse or the social worker, the neuropsychologist and the doctor in charge of the clinic could join in.

- 3 second assessment interviews occurring one year after the first round of interviews and tests. These interviews, led by the practitioner who had performed the second round of interviews⁷, followed the same battery of clinical and imagery tests as the one performed upon the patient's admittance to the ward.

Prior to each consultation I had asked the patient for admission in the consultation office to the patient's oral agreement. To complement my observations I conducted bilateral interviews with all the staff members that took part in the various stages of the clinical investigations along with the practitioners, either to collect their immediate feedback after an assessment, or to enhance my understanding of their work procedures and to clarify certain medical aspects.

Closing the Gap between Symptomatology and Diagnosis

There are three distinct factors that form the field of AD and contribute to the sense of a looming "senility crisis": The ageing population along with their carers and their entourage, the medical practitioners and specialized researchers, and a financially restrictive political context⁸. The interaction between these three lines of force—with their respective concerns and goals—have combined to make Alzheimer's disease an actual public health issue and to lend it the appearance of a unified nosological entity.

1. Individuals who experience memory problems expect to be informed and reassured about whether their symptoms are pathological or merely the usual results of ageing⁹.
2. Doctors with elderly patients, the majority of whom are over 70, need to be equipped with a clear set of criteria to distinguish between those who are obviously suffering from the disease, those with possible AD symptoms, and those whose problems are merely the result of the usual ageing processes.
3. The Department of Public Health faces serious problems: The ageing of the population raises the prevalence of AD and, as a result, the costs inherent to its detection and treatment. The credibility and visibility of AD leads to a societal problem with an unwelcome side effect: A public health dilemma is created in which, within a vicious circle of psychological cause and effect, a bottomless tank of potential patients is created, for whom detection infrastructures are insufficient unless increased levels of resources are allocated, thereby increasing the costs of the detection and treatment of a disease for which there is still no cure.

These three strands weave the fabric of the social and medical reality of AD, causing it to be objectified as a nosological entity, despite the fact that there is no consensus over its etiology and, therefore, no basis for its cure. The dominance of a biomedical logic within the hi-tech world reveals itself in the approach to AD. Its dynamics can be clearly discerned in the relationships linking together various actors involved in the field of dementia medicine (patients and their families, health professionals from a variety of domains, and geriatric carers), all of whom are caught in an interactive

spiral programmed to produce specific meanings for each and all of them. This state of affairs is further mediated by the mobilization of a plethora of 'non-human entities' (Latour, 2007), whose function is to provide reliable information pertaining to pathological signs: Entities such as proteins, magnetic brain scanning, neuropsychological testing, pharmaceutical products as well as database creation and management. These constitute tools for measuring the pathological manifestations of cognitive disorders, and lending them scientific credibility through their quantification. When cognitive impairments are submitted to the prism of such non-human entities, the patient's individual experiences serve to provide specialists with the raw materials for the accumulation of data, theorization and standardization. As they take place within the dementia picture, these non-human entities contribute to the creation of a global understanding of the etiology of the disease.

The more patients, the more systemized the machinery for the early detection of the disease. Due to restrictions imposed by health insurance companies, face-to-face interactions between clinicians and patients to establish a diagnosis must not exceed three and a half hours. Given the mysterious processes by which human cognition evaporates and with the disparate nature of the types of information susceptible to lead to additional knowledge about the disorders and the ways to treat them, only standardized methods permit a reliable and comparable diagnosis in such a short time. Procedural homogeneity is the way the medical experts have elaborated to reduce the risk of developing a non-objective diagnosis. It is a methodological work approach admitted among the

medical community in order to enable the “suppression of some aspects of the self” (Daston & Galison, 2007: 36). In modern medicine, behaving objectively means adhering strictly to a set of clinical provisions based on the intention to develop specific determiners not suspected of being contaminated by the specialists’ subjective interpretations. The objectivity of the diagnosis is expected to result from the strict respect of rules, procedures and protocols. This implies the adoption of a standardized method of management of the collected data. Measuring and managing the interaction between human and non-human protagonists so as to allow the elaboration of a pathological grid is the agreed upon method of avoiding artifact risks. However, collecting signs and data and assembling them in a precise order to extract useful information requires specific skills and training, in other words, it is how one develops an ‘exercised eye’ (Daston & Galison, 2007). Reaching this goal implies isolating the symptoms from the patients experiencing them and translating said symptoms into medicalized categories. Two concepts are fundamental to the effective orientation of all clinical investigations associated with memory disorders: On one hand, the ‘successful ageing’ (Ballenger, 2006) and, on the other hand, MCI (mild cognitive impairment).

As shown by Ballenger (2006), the concept of ‘successful ageing’ has a paradigmatic position in the gerontological literature framework. The concept appeared around the 1980’s with the intention to emphasize the ability of some ageing people to maintain their organ functions to a similar level as those of younger adults. Accordingly, every ageing person who does not have the chance to know the ‘silence of their

organs’ (a brilliant expression developed by physician René Leriche (1879-1955)), is a person undergoing a “normal” ageing process. Thus, in opposition to its normal counterpart, ‘successful ageing’ is an unattainable ideal. Gerontologist James S. Goodwin (2000) criticizes the concept of ‘successful ageing’ for it expresses an ideal that depicts a moralizing ideology. ‘Successful ageing’ entails that it should be possible to grow old without necessarily becoming senile. This concept reflects an epistemic necessity to disrupt the idea of an inexorable continuum between normal ageing and pathological ageing.

The MCI category is also a crucial concept that enables the linkage between the various scientific and medical disciplines involved in the reality of AD. It is simultaneously a condensed product of the comprehension of the degenerative process and a working tool for intervening in its manifestations. It provides neurobiology, neurology, geriatrics and psycho geriatrics with a common basis for dialogue. It is a result of (mainly) clinical observations that lead to relinquishing previous categories of senile and presenile dementia in favor of a progressive phenomenon. The origins of this concept can be traced back to the 1960’s with Kral’s study on benign and malignant mnemonic impairments (Kral, 1962; Michel & Becker, 2002). This study marked a turning point with regard to specialists understanding the disease as defined by Alzheimer in 1906. In addition to dismissing the age criteria as irrelevant for the etiology of the disease, it also pointed to an evolution in its understanding. Rather than clear-cut categories, it introduced the idea that there is no sudden fall into dementia but a slow progression where signs are not visible in the brain unless an autopsy is performed¹⁰ and where behavioral

symptoms become obvious only when the disease is well established. This new grid of lecture was also accompanied by the understanding that dementia is a heterogeneous syndrome having similarities to the cognitive disorders expressed by the patients. Due to the long and silent asymptomatic phase, during which the confusion between cognitive impairments associated with ageing and predemential cognitive disorders was very frequent, practitioners faced the need to define criteria which might be predictors of progressive cognitive deterioration and which could be recognized as clinical entities that could in turn be characterized for medical follow up.

Neurologists agree to consider Charles Flicker, a researcher at the Ageing and Dementia Research Center of the New York University Medical Center, as the one who introduced the concept of MCI (Flicker, Ferris and Reisberg, 1991). The first mention in scientific literature of mild cognitive impairments related to ageing dates back to 1980 with the paper of Ferris and colleagues. The number of publications that have "MCI" and "memory disorders" as key words in the PubMed database (157 for the period ranging from 1980 till 1991) shows that scholars spent a considerable amount of time dealing with this specific topic during the 1980's and demonstrated an already high level of concern for improving the diagnosis of dementia. The increasing number of patients admitted for memory deficits increased the pressure on practitioners to sharpen their tools of analysis. The merit of Flicker and his colleagues was to define the psychological tests that can be used to discriminate between mildly impaired elderly subjects and those whose prognosis is relatively benign,

and to establish easily identifiable evidence of the characteristic symptoms of possible incipient dementia that can be reliable predictors of future cognitive deterioration. The 1991 paper was an appeal not to classify as normal subjects who were identified as borderline by the tests. This approach turned out to be an open door to extend the range of candidates for AD.

Flicker and his colleagues' intention was to establish clinically detectable signs of cognitive decline capable of distinguishing between the category defined by Kral in the 1960's as benign forgetfulness and "more significant underlying disorders in mildly impaired elderly subjects" (Flicker et al., 1991: 1006). The introduction of the MCI category opened up working paths for practitioners to intervene on the "outskirts" of the disease, or more precisely, to intervene at a time when it is not yet clear whether or not the disease is present. Stemming from the work of Flicker and his colleagues, criteria for clinical definition were developed during the 1990's, accompanied by a steady collection of data enabling to measure the rate of conversion from MCI to dementia as a demonstration of the relevancy of the concept.

However, it appears that the use of MCI as a clinical diagnostic raises a difficult question: What are the reliable clues that allow distinguishing between patients who may not develop dementia and those who may already be on the degenerative slope? Due to the fact that there is no consensus among neurobiologists on one hypothesis, and that cerebral imagery is of no help in the diagnosis, this question remains unresolved and leaves the door open for clinicians to develop their own assessment tools. After just one decade of use, the concept of

the MCI category appears to be highly problematic for clinical assessment due to its lack of precision. Practitioners find it necessary to reach an agreement on the best discriminating factors: controversies over the clinical appropriateness of the concept have been voiced. Blandine Acket and colleagues (2009) consider that it can no longer correspond to the AD pre-demential symptomatic phase since all the patients labeled with MCI do not end up developing AD necessarily. Without excluding the possibility to clinically detect the disease at a very early stage, Bruno Dubois (Dubois, Beato & Kalafat, 2002) suggests to reformulate the MCI's significance: Either to agree that it points to a syndrome covering various distinct etiologies, including AD, or to limit it as a framework for the early identification of AD, in its symptomatic pre-demented stage. Should this last option be accepted, the scholars' proposal is to consider three types of disorders: The amnesic type, the multiple area type, and the Alzheimer type, also called the prodromal type (Dubois & Albert, 2004). Under these conditions, MCI is supposed to remain an "entity by default," useful only in the very cases where a precise diagnostic cannot be established. While it enlarges the population of possible candidates for dementia upstream, the MCI category happens to open a grey zone, namely that an MCI diagnosis does not necessarily mean that a person suffers from the disease but can nevertheless be treated by dementia medicine.

Standardization of Diagnostic Practices: The Three Components of the Clinical Investigation of Memory Deficits

The factors of predisposition to illness, in old age as at any time in life, are highly variable and can have a biological and/

or environmental origin. Therefore, diagnosing a pathological cognitive deterioration entails laying down a combination of various factors. A consensus conference on dementing diseases held in 1987 developed the main guidelines still in effect nowadays for cognitive assessment and the recommended treatment of cognitive impairments (Consensus Conference, 1987). The screening methods employed for diagnosis produced work approaches that consist in accumulating numerous sources of information and then formatting the resulting data. Clinical assessments were given a predominant role in this task due to the lack of practical applications expected from paraclinical tests (biochemical markers and cerebral imaging). This transformative work provides information that is rather evasive to the patient but useful for the practitioners due to the amount of data that is amenable to measuring and comparing. The emergence of the MCI category can be considered as a by-product of these sorting procedures.

Medical Investigation

The procedures observed in the memory clinic where this study was carried out correspond to those described in medical literature and by social science scholars alike. The first phase consists in a medical investigation that brings together a medical practitioner¹¹, a carer (social worker or nurse) and the patient accompanied by a member of his or her close entourage. The intended function of this tripartite interaction is to establish a level of awareness to the illness different from that which preceded the meeting, or, as Bruno Latour (2007) put it, to provoke an 'event'. The doctor must 'provoke' the patients and their entourage into laying out all the details of their situations so as to state the level of memory loss in an

'objective' way and to situate it within a biography capable of making the patient's individual trajectory explicit. The anamnesis process has the ability to subject all the actors to a movement that will reposition them with regard to their starting point:

- a) The doctor, on the one hand, will have collected information originating from the patient's behavior through diagnostic scanning and laboratory testing. This information will allow him/her to expound a medical discourse that will be qualitatively different from the superficial impression based on meeting a person for the first time.
- b) The patients, on the other hand, will experience a fragmentation of their own perception into a myriad of details, all tending to emphasize the weakness of their internal coherence, in the presence of an accompanying person from their close entourage (see endnote number 5).
- c) The social worker will hold a clinical interview with the patient's relatives in order to obtain a more complete picture of family, social and environmental data.

This first stage of the medical investigation process is represented by the medical staff as the phase in which the patients' demands are clarified. Justifying the medical right to investigate personal aspects of a patient's life on the basis of a postulated demand initiated by the patient is part of the usual medical rhetoric. In specialized literature, a patient's demand is the motor for the establishment of what is labeled a 'therapeutic alliance'. This formula asserts a trust binding together the practitioner and his/her patient over a common

interest to clarify a problem initially acknowledged by the patient. However, the memory clinic has the particularity of creating an encounter, the first motivation of which is not necessarily the patient's request for clarification. Most of the patients who came to the memory clinic where this ethnographic observation was carried out for their first consultation, expressed reluctance to collaborate with the practitioner who conducted the anamnesis interview. The large majority of them had been referred to the memory clinic by their GP, or to a lesser extent on the initiative of their family carer. In response to her practitioner's question on the circumstances that had brought her to the memory clinic, an 86 year-old woman replied,

I can't tell you why. I have a new GP. He's the one [who made the decision]. True, I've got memory problems, but that's normal. It's due to my age. Everyone has those problems at this age. That's not a reason to bring me here.

Showing no particular attention to the patient's reluctance, the practitioner invited the woman to describe the type of problems she identified in her daily life:

Since I live on my own, everything is difficult: The administration, the physicians, moving around. But I didn't ask for this consultation.

A 73 year-old man who arrived accompanied by his wife showed obvious signs of disagreement with the clinical investigation. Most of the time he answered the practitioner's questions negatively and very laconically, his wife adding her own precisions or commentary to his version. Asked to inform the practitioner of his perception

of the changes in his condition, the man said that he did not notice anything in particular:

Wife (talking to the practitioner): "It depends on the day. Sometimes his reactions are slower. Sometimes one has the feeling that he forgets what we are talking about."

Patient: "I just don't answer, that's all. For me, I have come here too early." (He repeated this sentence several times during the consultation)

Proceeding with his questionnaire, the doctor gets the patients to list their medical anamneses. The doctor then relates the patient's accounts to the elements that the patient considers most relevant. Although this consultation takes place in the form of an informal conversation—allowing the accompanying persons the freedom to intervene as they deem fit—it actually proceeds according to a rigid structure. The doctor's mission is to bring together, within a short amount of time, all the information that is necessary to get an appreciation of the patients' memory problems: To identify both the patients' subjective and somatic complaints, and to constitute a biographical narrative of the patients' conditions. The doctor's efforts aim to provoke an epistemic transformation, which means moving one's reality to the realm of another actor and, by doing so, to modify the status of reality. Under the doctor's trained eye and ear, the patient's narration—along with that of his/her entourage—undergoes a process of transcription and purification used to extract signs of illness. Strictly speaking, the performative effect of that interaction is the transformation of the value of the data that all the participants agree upon, namely from a subjective status to an objective one, from normal to possible pathological ageing.

The structural guideline to the interview, which the doctors must always have and follow scrupulously given the rapid turnover of personnel that are unfamiliar with its contents, dictates the chronological order in which the various topics are dealt with, such as cognition, behavior, psychopathology, functioning (i.e. the functions that the doctor identifies as being likely to cause dependency), somatic anamnesis of physiological systems, and autobiography. The interview guideline is a codified document ensuing from extended debates among the psychogeriatric community and agreed upon by all memory clinics. It appears from literature that only slight procedural variations occur from one clinic to another. It does not limit itself to merely specifying the topics and their order; it also lays down the specific questions that must be submitted to the patient in order to bring any potential dysfunction to light. One should not forget that the first purpose of the interview is not to *listen* to the patients' worries, but rather to assess their case on a scale ranging from normality to pathology¹². Hearing the patients' accounts is just a means among others to reach this goal.

Throughout this interview, the nurse's job (or the social worker's, since they are interchangeable in this particular setting) is to observe the interaction between patient, accompanying person and doctor. When the moment comes to share the impressions that have been collected, the nurse's observations are taken into account in the elaboration of the diagnostic hypothesis. Because of his/her detached position maintained throughout this first phase of the investigation, he/she keeps a better overall perspective of the patient's family, social background, and entourage. He/she is also supposed to gain a

better understanding of the weight of the patient's problems as seen by the entourage.

After this interview, while the doctor proceeds with some neurological exams (balance, reflex), the nurse withdraws with the accompanying person in order to establish a descriptive biography as perceived by the accompanying person via an interview. Again, the conversation must follow a guideline based on a psychosocial anamnesis perspective. The purpose of this exercise is to discover any possible divergences between the two versions of the patient's account, namely that of the patient and that of the accompanying person. Any omissions made by the patient may later take on a particular significance. Interviewing the accompanying person about the patient is intended to help the former to express his/her feelings more freely. Very frequently, it also provokes loyalty conflicts that are obvious in the way the relatives answer the questions by putting their kinsman's impairment into perspective. The burden on the family members is part of the clinical consideration of the cognitive degeneration phenomena. Therefore, the hetero-anamnesis carried out by the nurse serves to reveal indicators of dementia which the patient has sought to either minimize or to even consciously hide, in order to keep being considered as a normal aged person. The suspicion of "denial" is a recurring element in the discourse of the medical teams. It plays a fundamental role within the production process of a "true" account pertaining to the patient's situation. Following a clinical interview with an 82 year-old patient's daughter, during which the daughter described her mother as functioning appropriately, the nurse explained to me:

She (the daughter) is in complete denial. She minimizes her mother's

problems. Look, she gave me her own mobile phone number, which proves that she knows that her mother will not remember hers.

The notion of "denial" is ambiguous since its meaning differs appreciably depending on the perspective of the speaker. The patients and their entourage interpret instances of forgetfulness as acceptable signs of ageing, whereas the medical team agrees that there are signs of absence of acknowledgment of the reality of the disease. Practitioners consider it their duty to shed an expert light on the situation in order to initiate a therapeutic process. In the discourses by the patients and their relatives there is a claim to leave space for ageing whereas the medical ethos seeks to distinguish normality from sickness. To give way to such a distinction, it is necessary to transform the signs of mnemonic deficiencies into indicators of pathological ageing. Further assessments are required to reach evidence that is satisfactory enough to sustain a convincing medical discourse.

Neuropsychological Tests

As this first phase did not reveal anything precise about the degree of preservation or degeneration of the patient's cognitive functions so far or about the nature of the cognitive disorders—should they be of vascular origin, due to depression, or to degenerative processes—the next phase was, therefore, that of neuropsychological testing. This took place about a week after the first investigation. These tests were a mixture of various assessment grids. They had been elaborated with the purpose of processing the various levels of cognition (language, memory, practical attention) as indicators permitting to ground argumentations of objectified memory disorders. In order to correctly grasp the logic underlying these tests, it is necessary

to understand the meaning given to the notion of memory.

By definition, scientific memory differs from common sense memory. Nowadays a large amount of literature exists in various disciplines providing scientific explanations about the memory phenomenon, which ranges from neurology to cognitive psychology. Based on their particular concerns, specialists have conceptualized and categorized the phenomenon into different types of memory¹³. In neurological terms, memory is conceived as a dynamic process, continually accomplished throughout an individual's existence and which associates "primitive unconscious mechanisms with sophisticated cognitive processes." Memory is not exclusively concerned with the past. According to neurobiologist Françoise Schenk (2004: 46), memory is an adaptive tool. It consists in the ability to recall to the surface things learned and experienced earlier, things that then serve in the execution of original actions. It also consists in the ability to capture new information, which is in turn transformed into mnemonic traces, and thus enriches an individual's intellectual and sensorial apparatus. In other words, a person *is* his/her memory and this memory continues to be constructed throughout that person's life. As our cerebral structures become increasingly fragile with age, our adaptive abilities, which have always underpinned the construction and reconstruction of our consciousness, tend to deteriorate (Schenk, 2004: 85-101). Cognitive and affective disorders of the AD type hence consist in the collapse of the adaptive abilities, signaling a shift from the synaptic plasticity mechanisms involved in the construction of the self to a chaotic plasticity¹⁴.

Given the complexity of the theoretical

arsenal used to account for memory mechanisms, the range of different ways that neuropsychology has elaborated to test the mnemonic capabilities of patients constitutes an extraordinary effort of codification and of, albeit subtle, simplification. There is a wide range of batteries of tests employed in memory clinical assessment¹⁵, all reflecting a practical way of behaving objectively, namely performing objective acts: Submitting the patient to a precise set of questions, always the same, always in the same order, allowing the same amount of time to perform the exercises, weighing the results according to predetermined scales. Thanks to these transformations, practitioners have an operational basis to rely on in order to give a statement on the patient's cognitive state. Several tests to quantify cognitive alterations are performed so as to evaluate different cognitive functions: Spatial and temporal orientation, fixative memory (by memorizing three words), working memory (by carrying out a manual instruction), cognitive performance (through oral language with the naming of objects, the reading of a sentence, the writing of a sentence, through arithmetical calculation with the subtraction of one number from another and through the reproduction of a geometrical figure). The results are transcribed into scales suitable for comparing and categorizing patient performance. The evaluation of the gravity of the patient's dementia follows from the quantitative results.

Driven by cost constraints, neuropsychological tests are carried out in a rush—90 minutes without any rest—leaving the elderly patient quite exhausted. The tests submit the patients to a succession of questions and exercises designed to mobilize their aptitudes for attention, writing,

reading, arithmetics, drawing, manual dexterity, anterograde and retrograde memory and coding. The testing of this last aptitude plays a crucial role, as specialists mainly go by this particular aspect to distinguish preclinical evidence of Alzheimer symptoms in progressive MCI from other forms of dementia. In the specialist discourse, AD fundamentally consists in the loss of learning abilities, which manifests itself in the inability to acquire new information and, *a fortiori*, to retain it. Patients suffering from such difficulties are unable to repeat words that were enumerated to them only a few minutes earlier, even when those words are repeated a number of times and presented with the help of an indexing system. Patients suffering from forms of dementia other than AD, like fronto-temporal deficiencies, are able to learn the information, although with difficulty, but they manage with the help of a categorical index.

Despite the strict respect of a methodological protocol stemming from codified procedures unilaterally accepted by international neuropsychiatrists, neuropsychological tests are not devoid of controversy. Studies show that neuropsychological assessments performed by different teams using the same criteria reach divergent results with regard to the probability of clinical progression in AD (Dubois, Beato & Kalafat, 2002). Nevertheless, as in the first interview, a neuropsychological testing session has a performative effect on the patients. The 90-minute test constitutes a considerable ordeal for elderly patients; the more they advance, the more the patients are confronted with their weaknesses. The face-to-face confrontation between the patient and the neuropsychologist and the rigorous way it is organized reinforces

the impression of failure. “*I’m sorry,*” said the patient following her third failure to repeat the words written on a card. And, while facing the same difficulty with the same words upon the fourth attempt of the same exercise, she showed signs of anxiety: “*I made some mistakes, didn’t I?*” Later on she got upset with herself when failing to remember her birthday: “*Oh, my goodness!*” When the interview was over, she expressed her worry by asking the neuropsychologist about her performance, while at the same time trying to plead her own cause: “*You know, I’m not worried, this is normal at my age, isn’t it?*”

MRI (Magnetic Resonance Imaging)

MRI is used for complementary information in shaping the clinical diagnosis by producing a visual representation of the structures of the brain and its vascularization. Cerebral imaging is a technoscientific field that opens tremendous new avenues in the means available for studying the brain in action. These technologies represented the main progress achieved in brain studies for the last twenty years and which today characterize neurosciences as opposed to former disciplines studying the brain. Among different purposes, CT scan, MRI, EEG or PET offer a range of possibilities to observe brain functions, brain atrophy and brain lesions. However, only MRI has become a routine tool in the practical assessment of dementia, due to the lesser availability and greater complexity of manipulation associated with the other technologies, the two factors translating into higher costs (Hüsing, Jäncke & Tag, 2006). Both morphological and functional MRI carry many expectations to diagnose AD among patients at risk, but at present it is not possible to rely on their outputs

to merely assert AD at a predemential stage (Dubois, Beato & Kalafat, 2002). The reason is that MRI does not give access to a fine view of the molecular structures, especially in deep brain layers, which are the first to be damaged during the cerebral degenerative process. This explains why MRI rarely adds any information to what has already been determined by previous clinical assessments, but rather allows a visualization of the situation in a different form and, more often than not, confirms the perception the team has already got through the synthesis of their different interactions with the patient.

Producing diagnostic images is not trivial when cumulated with the other diagnostic tools as an element of further scientific proof, the credibility of which is never questioned by the team. Imaging technologies introduced in routine medicine mark an epistemic turning point for which researchers in the field of sociology of science have taken a particular interest (Boullier, 1995; Beaulieu, 2002; Dumit, 2004; Daston & Galison, 2007). The quality of objectivity granted to the various techniques of cerebral imaging is founded on the postulated autonomy of the ability of the resulting image to reveal the condition of the patient. The image is supposed to be free of any personal interpretation of the practitioner. Yet, social science studies have demonstrated the significant extent to which such images—regardless of their technological basis and production method—always represent the end result of a complex construction process that implies an entire series of technical choices and theoretical options predetermined by the way the organ to be represented should look like. The inclusion of these technologies in the routines of the construction process of medical diagnostic tools

reveals to what extent medicine has been impregnated with a new 'epistemic culture' (Knorr-Cetina, 1999), a culture in which the visual dimension takes precedence over the audible, a culture that weighs the *pictures* of lesions rather than the *words* of the patient (Rigaux, 1992). This cultural feature not only constitutes a significant characteristic of contemporary technologized medicine, but it also points out the links that have sprouted between medical practices and imaging laboratories. Although MRI is almost invariably called for in the context of memory-problem consultations, practitioners tend to make use of it in cases where they discern a phenomenon of *denial* by the patients. In relying on the image of the patients' cerebral structures, the practitioners effectively delegate to the image a part of their tasks to convince the patients and their entourage of their pathological conditions. Thus, imaging serves the purpose of reinforcing the conviction process regarding the reality of the disease that had already begun with the first stage of the consultation.

Within the diagnostic framework, MRI must corroborate all the other clinical observations. This, however, is by no means always the case. What is particularly striking in cases of divergence, i.e. when there is an absence of any visible sign of cerebral lesions but where difficulties with operational functions have been empirically observed, is that the patient still does not escape from being pathologically labeled. In such cases, the absence of MRI findings cannot invert the diagnosis and the clinical observations remain determinant. In case of nonappearance of visible signs of cerebral lesion¹⁶, the conclusion that is communicated to the patient is formulated in terms of "cognitive problems of mixed origin."

This indicates that for practitioners technical results are not the ultimate evidence when it comes to making a medical assessment. Creating a category of people suffering from a specific illness implies a production of 'facts' requiring various operations: Isolation, selection, purification and measurement (Hacking, 1983). Bringing together the clues and selecting only the right items requires particular skills, which Lorraine Daston and Peter Galison (2007) call a 'trained judgment'. Objectivity does not mean that practitioners blindly follow automatism. They mobilize their abilities and apply a 'trained judgment' based on their familiarity with the phenomenon and on the experience they have gathered facing it. Through a huge syncretic work done upstream of the disease and implying knitting together technological abilities and theoretical knowledge, practitioners make use of a scientific object, the conditions of existence and utility in routine medicine of which depend on standardized practices. While relying on their 'trained judgment', technicians and doctors build the 'objectivity' of 'facts' together. They contribute, with each new diagnosis, to the establishment of the biomedical model relating to the tipping point between normal and pathological ageing. In turn, this process produces a "true" discourse about the reality of human ageing.

Formulating a Diagnosis: Systematized Translations

The final stage in the clinical assessment process, which lasts for about a month after the first anamnesis interview, is the restitution interview. All the elements established during the three previous clinical investigation phases systematically confuse the signs of the illness with its symptoms. Through this

amalgamation, the distinctions between these two separate ranges of significance are blurred and, like the pieces of a jigsaw puzzle, the more these combinations are applied by the professionals in the process, the more they become inscribed, thus acquiring the characteristics of factors able to play the role of nosological facts. They undergo an ontological transformation allowing them to be used to establish the patient's case history. Thus, these inscribed factors are added to the suspicions originally formulated by the practitioners in their case notes as the result of the first stage of the investigations. All the data generated as a result is formatted in such a way that each entry is articulated with the other in order to establish a normalized case history in which all the various headings are filled in, either with figures that situate the patient's condition on an evaluative scale, or with medical terms denoting somatic or psychiatric ailments. Within the mosaic of details brought together to constitute this referential case history, there is no predominance of one element over the other. This is illustrated by the following example:

Patient: "I know my memory is not exactly what it used to be, but I'm not worried. I know I didn't answer all the questions correctly."

Doctor: "I have to write to your general practitioner to ask for additional blood tests and vitamin B12."

Patient: "Do I have to see you again?"

Doctor: "The MRI shows a bit of atrophy, your brain has become smaller."

Patient: "What does that mean?"

Doctor: "Based only on the MRI, one cannot foresee the consequences, therefore, we must have a look at all the details. We have also noticed

arteriosclerosis. In addition, together with the neuropsychologist we have noticed that you couldn't answer all the questions. There are memory disorders."

Patient: "It's because I'm not Swiss; I don't remember all the words¹⁷."

Doctor: "But, Madam, we compare you to the expected performance corresponding to your age and not to a general scale. We have also noticed that you face some problems in the executive functions, such as planning and organizing."

Patient: "How can you come to such conclusions? You have never been to my place, how can you draw conclusions about the way I organize things?"

Doctor: "Look, for instance, if you happen to go home by public transportation, you have to take the right bus number in order to get to your place. This can be problematic. We have performed some tests and we have noticed that you also have some other difficulties. I cannot explain it all to you. But the main problem is memory and executive disorders. The question is to know where it comes from."

Patient: "It's due to my age."

Doctor: "Age is no explanation. It's a bit more acute than normal; it's due to vascular problems and to a memory disease."

Patient: "How can you come to such a conclusion? Is it because of the images from the machine?"

Doctor: "It is based on tests. You have spent an hour and a half with the neuropsychologist. The machine was a scan and it shows degenerations in the neurons. How does this make you feel?"

Patient: "Do you want me to speak frankly? I don't believe it. I am alone,

completely alone. I'm the one who does everything, absolutely everything."

The paradox of the absence of a clear turning point in the disease emphasizes the biomedical logic: Although the organic causes of cognitive degeneration are not well known, the belief in their existence and in their prominent role in the pathological state of the patient is total. Due to the lack of paraclinical markers capable of filling the gap between neuropathological causality and clinical observations, the search for explanations lies in non-sensitive data in order to establish the proof of the disease. Therefore, the official final document, called the "letter of discharge", combines autobiographical elements with somatic antecedents, the words of the patient and/or the accompanying person with the observations of the clinical practitioners, and laboratory and imaging data with the results of cognitive evaluation tests expressed in terms of figures compared to scales of measurement. All these various elements are kept as long as they are perceived as relevant, only those elements capable of contributing to a unified sense are retained (e.g. a female patient's account pertaining to her difficult childhood attributed to her dislike of the man who married her mother did not catch the practitioner's attention. The story did not enter the nosological picture because when the patient narrated those details, the practitioner was busy looking for heredopathy indicators. A father with no biological ties to the patient had no indicative value in the construction of a pathological profile based on biochemical mechanisms of dysfunction).

The work undertaken to achieve the end result indicates that there is no such thing as "raw facts or data" that are neutral with respect to their causal or explanatory

status in relation to the patient's state of health. The facts recorded by each of the clinical practitioners involved are all recorded because of their ability to capture the practitioner's interest by virtue of their resonance with the socio-medical culture with which those practitioners are imbued. Thus, all possible facts are separated into two categories: Either they are signs or symptoms subject to 'translation', in the sense intended by Latour (2007), or they are "nothing", negligible because they have no potential for significance in the construction of the diagnosis.

The Notion of MCI: The Calm of Limbo

The notion of MCI": Despite the whole arsenal of tests and somatic and psychiatric investigations, the tipping point that separates those patients who merely manifest normal signs of old age from mildly impaired people who are likely to undergo significant deterioration within one or two years remains vague. At the end of these assessments, the only non-problematic category of patients screened is that of dementia sufferers, in other words, patients who have obviously been denied their autonomy¹⁸. As seen earlier, given the ongoing lack of ability to specify the parameters of its area of competence, dementia medicine relies on a notion that creates what might be termed as a grey zone, namely MCI (Mild Cognitive Impairment), to enroll as patient's people who might manifest progressive cognitive deterioration. The concept of MCI consists in a "standardized package" (Fujimura, 1992) in the sense that a common discourse is being constructed around it, which allows the various disciplines of neurobiology, neuropsychology, psychiatry and geriatric medicine to intercommunicate. Faithful to its preventive role, the public health

discourse provides reliable bases for a multi-disciplinary focus on symptoms of cognitive disorders. Due to its inability to unequivocally set the markers of the disease, dementia medicine deploys the concept of MCI to gather into its net a multitude of patients who, though not yet ill, are susceptible to becoming so.

MCI criteria, as defined by Smith, Petersen, Parisi and colleagues (1996) are: Mnesic complaint confirmed by the family; normal daily life activities; globally normal cognitive functioning; objective memory disorders; 0.5 on the clinical dementia rating scale; absence of dementia. With such a wide definition, it is not surprising that MCI deals with characteristics that are relevant to some 40% of patients examined within the context of consultations about memory problems¹⁹. It covers an evolutionary stage characterized by morphological changes which progress symmetrically with alterations in cognition that range from slight difficulties to serious disruptions of episodic memory. Because of its unclear limits, the category is nowadays criticized as being a nosological framework that is too heterogeneous to be useful for stating the specific evolution of patients diagnosed with MCI. Its lack of specificity also exposes it to criticism due to its uselessness in the development of a specific therapeutic approach (Michel & Becker, 2002; Dubois, Beato & Kalafat, 2002; Acket, Lemesle, Puel & Pariente, 2009).

Nevertheless, practitioners do not renounce using it. A relevancy of diagnosis is recognized to the MCI category because of the high rate of subsequent conversion to AD, as most of the elderly subjects show progressive mental deterioration after two years. Follow-up studies show that in the longer run (nine and a half years), 100% of the patients followed in a neuropathological study developed

a form of dementia (Morris, Storandt, Miller, 2001)²⁰, and in 84% of the cases that dementia was of Alzheimer type. Based on this evidence, clinicians avail themselves of the relevancy of MCI for the early stage identification of AD.

In opposition to this general tendency, Dubois (2000) calls for the cancellation of the MCI concept and argues in favor of its replacement by criteria pointing more precisely to features specific to predementia AD, as this pertains to the largest group of so called MCI patients. This methodological change is however conditioned by additional paraclinical assessments to the routine clinical one. It implies enhanced cerebral imaging tests, both functional and morphological to measure brain atrophy and cerebral metabolic changes, as well as neurobiological tests to identify molecular and biochemical markers of AD. While, according to Dubois (2002) and practically speaking, these types of investigation are already technically available, this is far from being the case in public medical facilities.

Even though the medical accuracy of MCI diagnosis is highly questionable, its use in routine assessments in memory clinics is not devoid of impact. Referring to it produces a performative effect, both on patients and relatives and on the practitioners. While a diagnosis of MCI does not mean that a person is suffering from the illness, it does imply that the same person should be considered as a patient. By proposing that this person should follow a pharmacological treatment (aiming to improve cognitive awareness but not to cure anything), and by initiating a conceptual transformation of the subjective interpretation of the problems afflicting the person and his/her entourage, medical science turns the person in question into a patient for an

undetermined period of time. Therefore, within the framework of the clinical investigation, the imprecision of the pathological status of a patient diagnosed with MCI benefits both protagonists: The patient because he/she is not labeled with Alzheimer's disease, and the doctor because he/she is free from the obligation to make a diagnosis that is tantamount to a (cerebral) death sentence. The following exchange between a practitioner and a 77 year-old man during the restitution interview is illustrative of that point:

Doctor: "You came here on the 10th, is that right?"

Patient: "I can't tell you the date. I did some drawings."

Doctor: "Yes, it's difficult. You met with Doctor S. Then, you came on the 16th to meet the neuropsychologist and you had a few tests. Later, our team discussed your case. We assessed that you face difficulties in writing, also in drawing figures, as well as memory. This points to difficulties at various levels. These are problems of execution, though they are mild. They are also mild problems of attention. What I'm telling you is that there are disorders in several areas, they are mild, but all over."

Patient: "Yes, it doesn't surprise me. What about the MRI, what did it show?"

Doctor: "It's what we call MCI, which means mild cognitive impairments. It is not AD. It might be the start of something, but the disease is not there. You are not necessarily going to undergo an evolution into the disease. The MRI didn't show anything. At this stage there is no precise treatment we can give you. I can give you Symphona. It's a homeopathic root. It can help. But a treatment for AD at this stage is not necessary. That is why we plan to

conduct a reevaluation within a year.”

Patient: “Well, I guess you could say that altogether, I am fine!”

The feeling of relief is perceptible not only in the patient's words but also on the practitioner's side. As I asked for the latter's opinion at the end of the interview, he said to me, “*It was an easy, non-ambiguous case. The diagnosis is MCI and not Alzheimer.*” Knowing the highly ambiguous information concentrated in an MCI diagnosis, one cannot interpret the physician's conclusion as anything other than an expression of affective relief and not as a medical statement. Thus, the buffer zone opened with the help of the MCI concept allows the patient to become the subject of the doctor's attention without having to assume the burden of the threat associated with the image of AD. With the help of the battery of clinical tools, the evolution of the patient's cognitive faculties can continue to be tracked within a nosological trajectory framework. This way, the early screening carried out by means of the memory consultation perfectly serves its purpose as conceived by the health insurance system that is responsible for configuring the management of health and illness in our societies. Patients who are invited to begin a preventative program and their relatives welcome the MCI label with relief, seeing it as a permission to interpret the cognitive impairments as signs of possible normal ageing. Last but not least, in the context of “dementia medicine,” the MCI category provides a stimulating basis that calls for the development of a biomedical alliance between the clinics, the research laboratories and the pharmaceutical industry, with a view to produce new molecules that are capable of slowing down the degenerative process²¹. Rhetoric of hope sustains the ongoing discourse

emanating either from neurogeriatric background or from pharmaceutical laboratories. Predictive medicine as encouraged by the health insurance system provides all protagonists with an interest in identifying early signs of pathology. A predementia diagnosis brings an authorized basis to transform a subject into the target of biomolecular treatments aimed at slowing down the disease process, and moreover, it enriches the databases used to refine preventive models and to optimize diagnostic procedures for future cases.

Conclusions

Even though the pathogenesis of AD remains mysterious, the biomedicalization of the cognitive problems predicted in the ageing process has firmly settled in our social landscape, which it successfully modified over the last century. It is not so much that its influence has made itself apparent in the ways that the illness is prevented and treated; it is rather the way that it has affected the manner in which senility and ageing are viewed in society. By supplying scientific elements that allow the objectification of cognitive problems in terms of cerebral lesions and faulty neurotransmission, the biomedicalization of dementia has insinuated a conceptual fracture separating “normal” ageing from the pathological variety. This trend is not the result of scientific research alone. The turn towards neurosciences to develop scientific models endowed with convincing explanations of how the brain enables the subject corresponds to a cultural characteristic of our present time. The epistemic conjunction of the mind and the brain that provides neurosciences with their conceptual content is particularly beneficial to geriatric psychiatry. It gives a materialized

basis on which a convergence can be built for a demographically ageing population with a cultural feature that consists in interpreting the workings of the mind and its dysfunctions in terms of biochemical mechanisms operating within cerebral structures. In coherence with the biomedical paradigm, all dysfunctions are supposed to have an organic origin and therefore should be able to be detected. While neurogeriatrics strives to adjust procedures to mark out the cerebral lesions postulated to occur early in life, the early onset forms still raise difficult diagnostic problems. So far, it is the subject, through neuropsychological investigations and not its biochemistry, who remains the usual entry point to help distinguish between cognitive changes that are not severe enough to warrant the diagnosis of dementia and impairments meeting the criteria of this disease. The societal necessity to think about the conditions that would make healthy old age more likely reinforces our tendency to trace parameters of pathological ageing. This is the context in which geriatric psychiatry has developed its clinical approaches aimed at early screening for signs of dementia and at their preventive treatment. In doing so, clinical approaches to cognitive degeneration at an early stage are reinforcing the objectification of AD by standardizing its symptomatology. The effect of this biomedical discourse on the general public is creating a disassociation between so-called "normal" ageing and the pathological variety.

The diagnosis process observed in this paper shows how complex and hazardous the clinical assessment can be when it allows practitioners to state a transition from cognitive ageing into a solidified category of pathological ageing. From the various professional interventions

emerges a unified profile for the disease that tends to homogenize the broad individual variations of cerebral ageing²². However, despite the various ambiguities entailed by the collected data likely to be interpreted as signs of illness, the MCI category appears to be a useful tool. It gives practitioners a comfortable space to mediate between conflicting meanings and to convince their patients to enroll in a therapeutic course.

Clinical approaches to dementia contribute to the production of a medicalized version of individual experiences of mnemonic loss in various ways. They assemble certain signs and symptoms, processed in a way that allows the deduction of a proper diagnosis. The diagnosis practice enables practitioners to compare data and to construct from them an account suitable for being translated as the demonstration of pathological problems. In doing so, dementia medicine creates a bottomless tank of patients, including people who are not necessarily ill and might not develop a form of AD. The activity of these clinical approaches gives them the autonomy of a biomedical discipline in its own right, a discipline which is destined to achieve an ever more significant role in the future, given the rising proportion of the elderly in the population. Through its functioning, dementia medicine creates a commonly held referential framework that brings together all the various stakeholders (doctor, patient, caregivers, social and professional entourage) in a 'disease-sociability'²³ characterized by their shared fear of AD. Finally, clinical approaches to dementia emphasize the distinction between 'normal ageing' and 'pathological ageing', despite the lack of any certain and unambiguous patterns between neuropathology and a non-pathological process of cerebral ageing.

Notes

- ¹ In this regard it is worth noting that the concept of informed consent is not strictly respected in this setting. Clinical work seems to ignore the fact that clinical assessments are interwoven with research steps, despite the fact that the data collected during the medical consultations are used for the elaboration of frames of reference that will later on influence the adaptation of the medical practices. Since experimentation is a usual practice integrated in clinical activities and not limited in time, it escapes the ethical constraints applied to medical research. For more on this particular aspect of modern medicine, see Gaudillière (2002).
- ² The comparison with the literature on the diagnosis procedures of cognitive impairments shows that the setting observed in the framework of this study is pretty usual. This brings additional evidence of the standardization processes that shape the medical practices and contribute to the standardization of the illness.
- ³ The memory clinic was placed under the responsibility of an experienced psycho geriatric doctor. However, all interviews were conducted by two practitioners devoid of specific experience in neurology, geriatrics or psychiatry. As assistant physicians, they were assigned to the ward for short periods of time ranging from 3 to 6 months, for the purpose of acquiring competences in these two medical realms.
- ⁴ In the memory clinic where this study took place, two women with these two types of training held the same professional status.
- ⁵ The summoning letter sent to the patient requested that he/she come to the consultation accompanied by a relative. In the event that the patient did not have any relative available, it was recommended that any other caregiver, social worker or medical personnel from his/her entourage should be present. Literature shows that the inclusion of people related to the patient in the clinical assessments is a customary modality in memory clinics. The intention was to complete the data with information from people who could provide additional or confirmatory information about the subject, whose communication deficits were postulated. This procedure might raise ethical questions with regard to the violation of the medical confidentiality it implies. However, these aspects extend beyond the topic of this paper.
- ⁶ Mainly due to very short time contracts, this memory clinic experienced quite a high turnover during our observation period. The instability resulting from these work conditions weighted quite significantly on the mood of the staff on the ward. It generated a lot of frustration and discomfort and was the reason behind most of the staff's complaints. This human resources issue and the time available to perform the medical investigations together represent the most salient signs of the health system-related constraints intervening in the medical assessments. We shall expand upon these aspects further down this paper.
- ⁷ This practitioner was never the same as the one the patient had met a year earlier when he/she had come in for his/her first consultation, because of the aforementioned large turnover occurring on the ward.
- ⁸ Switzerland is known to be one of the most expensive countries in the world with regard to health costs. Their

constant rise has been at the core of national concerns for many years, opposing liberal views to more socially oriented policies, and never reaching a consensus to trigger political change. After a national ballot held in 1994 and effective since 1996, it is compulsory for every Swiss citizen to have basic health insurance. This legal condition transforms each citizen into a registered client of one of the dozen or so private health insurances in operation in the country. In return, health insurance companies are compelled to pay for the treatments charged by medical institutions. Long-term treatments, treatments for chronic diseases and in particular the care required to assist dependent patients represent the more problematic aspects of this expensive health system. Political authorities, health insurance companies and civic pressure groups lobby in various ways in order to reduce health costs. A consequence of this constant polemic climate is a strict policy allowance for public medical services financing, both in terms of staff and time limits put on consultations entitled to a refund. These constraints have a visible impact on the functioning of the memory clinic that was observed. Despite repeated requests from the doctor in charge of the ward, he never obtained the nomination of a head of clinic, nor the extension of the assistant physicians' contracts, nor the recruitment of a second neuropsychologist and aid to the two overburdened secretaries. Since the public service was the only one of its kind in town, the staff shortage had a direct influence on the practitioners' availability. Although all of them were working non-stop and very full days, the waiting period for an appointment at the memory clinic was three months at the time of this study

(2006-2007). Overtime was not paid, which was an additional reason for the staff's dissatisfaction with regard to their work conditions. This context explains why the practitioners were so careful not to exceed the time allowed by the insurance company rules to perform the various assessments listed in the clinic procedures.

- ⁹ The current language uses the term "normal ageing." We shall see further down that in fact, in biomedical language the "normal" category refers either to the absence of measurable signs of dysfunctions or to visible signs of lesions.
- ¹⁰ The power of discrimination allocated to autopsy assessment of the brain assumes the existence of a model representing how an old, non-demented brain should look like. This practice points to an additional step in biomedical standardization underlying any biomedical knowledge.
- ¹¹ This medical practitioner is not necessarily trained in psychogeriatrics, as shown here by the memory clinic that was observed. The importance of standardized applied procedures appears clearly: Without precise guidelines, physicians devoid of previous experience with cognitive aspects would not be able to be immediately operational, as was the case here.
- ¹² This scale, ranging from 0 to 30, is called an MMS test (Mini Mental State). It stands for the usual basic test performed as a first step to acknowledge cognitive disorders. The total potential sum of positive points available is 30. A score below 20 is considered an indication of mild dementia; a score inferior to 10 indicates severe dementia.
- ¹³ It is not possible within the scope of this paper to present an exhaustive

bibliography related to memory typology. However, for a summary account of the different memory models in use that is easily accessible to non-specialists (see Giffard, Desgranges & Eustache, 2001).

- ¹⁴ The relationship between the concept of neural plasticity and dementia of Alzheimer's type is expanded upon in my doctoral thesis (Marion Droz Mendelzweig, *Performances et défaillances du sujet cérébral. Regard anthropologique sur la plasticité cérébrale, les neurosciences et la clinique de la dégénérescence cognitive*, thèse de doctorat en sciences sociales et politiques, Université de Lausanne, 2008).
- ¹⁵ Here, reference is only made to those in use in the memory consultation process in the frame of which our research took place.
- ¹⁶ Most of the time, when signs are visible through an MRI, they attest to a previous cardio-vascular stroke.
- ¹⁷ This patient points out an important issue that would deserve more attention. Since memory deficiencies are mainly assessed through language functions (object naming, concept formation and discourse coherency), performing the interviews in an unfamiliar language might be detrimental to emigrant patients. Practitioners assure that they are conscious of this aspect and take it into account while assessing the patient's global condition. Nevertheless, language is only one among various other cultural patterns that interfere with the diagnosis of dementia and that are not questioned by dementia medicine.
- ¹⁸ Autonomy is an eminent cultural concept. The lack of autonomy points to an individual inability to perform culturally expected tasks according to his/her age, sex and status. Thus, handling finances and filing one's own income tax return is a recurring issue that is investigated during the cognitive impairments assessments. The same is true for gender stereotypes underlying the value given to a women's inability to cook and a man's inability to drive. In other cultural contexts the autonomy criteria might be different.
- ¹⁹ These figures, valid for the observed memory clinic, match the average MCI statistics found in medical literature.
- ²⁰ Such an absolute conversion rate gives credit to the argument that AD is, to a certain extent, a "waste-basket" category in the sense that in very old age there is no distinction between normal and Alzheimer elderly subjects: "In most of the longitudinal studies in scientific literature, old or very old brains without NFT (neurofibrillary tangles) in those areas (limbic system) are very rare. This supposes that the majority of the subjects, if they lived long enough, would eventually develop Alzheimer's disease" (Leuba & Savioz, 2004: 151, as translated by us).
- ²¹ There are millions of patients diagnosed with MCI around the world. A category as large as that of the MCI is an invitation to feed a bottomless tank with potential clients for preventive treatments. Despite this huge interest in terms of market development, neuropharmacological treatments remain scarce and are acknowledged to be of limited value. Not more than four different molecules aiming to slow down the degenerative process are currently available on the market. But their efficiency decreases as the disease progresses. With regard to MCI-labelled patients, the accuracy of these chemical treatments is forcibly low due to the absence of disease specificity, not to mention the complications

they might develop while interfering with the other medications frequently taken by elderly subjects. Practitioners therefore remain very cautious when prescribing an anti-dementia treatment to their patients.

²² Assigning sense to an illness is a common necessity. It is particularly emphasized in elderly cognitive disorders with a wide range of features by which patterns of pathology can be perceived. As he observed the mode of communicative usage at more advanced stage of the disease, Jaber Gubrium (2008) showed how disarray is serially used to structure, destructure and restructure the course of the illness. The process not only affects patients but also family members and practitioners.

²³ Paul Rabinow (1992) has developed the concept of "bio-sociability" to show that in contemporary societies, biological particularities, such as similar genetic patterns, are seen by social actors as signs of collective belonging and elements participating in the construction of one's identity. Referring to this concept, my intention here is to point to the social dynamics emanating from a shared representation of cognitive disorders as a major threat of disappearance of one's autonomy. Fighting the risk, either by medical interventions or social support, generate social link.

References

- Acket, B. B. Lemesle, M. Puel & J. Pariente (2009) 'Que reste-t-il du MCI en 2009?', *Neurologie com.* 1 (1).
- Ballenger, J. F. (2006) *Self, Senility and Alzheimer Disease in Modern America. A History* (Baltimore: John Hopkins University Press).
- Beaulieu, A. (2002) 'Images Are Not the (Only) Truth: Brain Mapping, Visual Knowledge, and Iconoclasm', *Science, Technology & Human Values* 27 (1): 53-86.
- Boullier, D. (1995) 'Du patient à l'image radiologique: une sociologie des transformations', *Techniques et culture* 25-26: 19-34.
- Consensus Conference. Differential Diagnosis of Dementing Diseases (1987) *Journal of American Medical Association* 258 (23): 3411-16.
- Daston, L. & P. Galison (2007) *Objectivity* (New-York: Zone Books).
- Dubois, B. (2000) 'Prodromal AD: a more useful concept than MCI?', *Curr Opin Neurol* 13: 367-69.
- Dubois, B., R. Beato & M. Kalafat (2002) 'Avant la démence..., ou les limites du concept de trouble cognitif léger (MCI: mild cognitive impairment)', *Medicine/Sciences* 18 : 775-79.
- Dubois, B. & M.L. Albert (2004) 'Amnestic MCI or prodromal AD?', *Lancet Neurol* 3 : 246-48.
- Dumit, J. (2004) *Picturing Personhood. Brain scans and biomedical identity* (Princeton: Princeton University Press).
- The European Dana Alliance for the Brain, (2007) *Progrès de la recherche sur le cerveau, La neuroéthique évolue* (Switzerland : EDAB).
- Ferris, S.H. & colleagues (1980) 'Facial recognition memory deficits in normal ageing and senile dementia', *J Gerontol* 35 (5): 7007-14.
- Flicker, C. H., H.F. Steven & B. Reisberg (1991) 'Mild cognitive impairment in the elderly. Predictors of dementia', *Neurology* 41: 1006-9.
- Fujimura, J.H. (1992) 'Crafting Science: Standardized Packages; Boundary Objects, and "Translation"', *Science as Practice and Culture*, ed. by Andrew

- Pickering (Chicago and London: The University of Chicago Press, 168-211).
- Gaudillière, J.P. (2002) *Inventer la biomédecine. La France, l'Amérique et la production des savoirs du vivant, 1945-1965* (Paris: La Découverte).
- Giffard, B., B. Desgranges & F. Eustache (2001) 'Le vieillissement de la mémoire, vieillissement normal et pathologique', *Gerontologie et Société* 97: 33-45.
- Goodwin, J. S. (2000) 'Geriatric Ideology: The Myth of the Myth of Senility', *Ageing and Everyday Life*, ed. by Jaber F. Gubrium and James H. Holstein, (Oxford: Blackwell Publishers Inc.: 331-339).
- Gubrium, J. F. (2008) 'Structuring and Destructuring the Course of Illness: the Alzheimer's Disease Experience', *Sociology of Health and Illness* 9 (1): 1-24.
- Hacking, I. (1983) *Representing and Intervening. Introductory Topics in the Philosophy of Natural Science* (Cambridge: Cambridge University Press).
- Hüsing, B. Jäncke, L. Tag, B. (2006) *Impact Assessment of Neuroimaging. Final Report* (Zürich: vdf Hochschulverlag AG and der ETH Zürich).
- Knorr-Cetina, K. (1999) *Epistemic cultures: How the sciences make knowledge* (Cambridge MA: Harvard University Press).
- Kral, V.A. (1962) 'Senescent forgetfulness: Benign and Malignant', *Can Med Assoc J* (86): 257-60.
- Latour, B. (2007) *L'espoir de Pandore: Pour une version réaliste de l'activité scientifique* (Paris: La Découverte) [1st ed. English 1999, Harvard University Press].
- Leuba, G. & A. Savioz, (2004) 'Vieillesse, plasticité et dégénérescence des circuits cérébraux', in Schenk, F. Leuba, G. Büla, Ch. Du vieillissement cérébral à la maladie d'Alzheimer. Autour de la notion de plasticité (Bruxelles : De Boeck) : 129-66.
- Michel, B.F. & H. Becker (2002) 'Mild Cognitive Impairment, Stade précoce de la maladie d'Alzheimer?', *Neurologies* (5) : 125-129.
- Morris, J.C., M. Storandt & J.P. Miller, et al. (2001) 'Cognitive Impairment represents early-stage Alzheimer disease', *Arch Neurol* 58: 397-405.
- Rabinow, P. (1992) 'Artificiality and Enlightenment. From Sociobiology to Biosociality', Jonathan Crary and Sanford Kwinter (eds), *Incorporation* (New-York: Zone Books).
- Rigaux, N. (1992) *Raison et déraison. Discours médical et démence sénile* (Bruxelles: De Boeck).
- Schenk, F. (2004) 'Les ressources adaptatives : des anticipations involontaires aux stratégies conscientes' and 'Les ressources adaptatives : l'épreuve du vieillissement', in Schenk, F. Leuba, G. Büla, Ch. Du vieillissement cérébral à la maladie d'Alzheimer. Autour de la notion de plasticité (Bruxelles: De Boeck): 43-101.
- Smith, G.E., R.C. Petersen & J.E. Parisi et al (1996) 'Definition, course and outcome of mild cognitive impairment', *Ageing Neuropsychol Cognition* (3): 141-7.

Marion Droz Mendelzweig
 Haute Ecole de la Santé La Source,
 30, avenue Vinet
 1004 Lausanne
 Switzerland
 m.droz@ecolelasource.ch