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Cognitive Optimisation and Schizophrenia: Assembling Heterogeneity, Overcoming the Precariousness of Life, and Challenging Public Health Policies in Psychiatry in France

Abstract

Cognitive remediation therapy (CRT) aims to optimize cognitive abilities of people who suffer from schizophrenia in order to improve their social adaptation. This therapeutic orientation was developed in psychiatry in the 1980s and 1990s, at a time when the disorder was being redefined as a neurocognitive deficit disorder. In this article I describe CRT as an assemblage that lies at the intersection of multiple, overlapping theories and spaces of mental disorders and psychiatric care. To do so, I draw on 18 months of ethnographic research conducted in a French hospital unit dedicated to the development of CRT. I argue that the focus on cognitive health and cognitive abilities (or deficits) is not only redefining the logics of care and reshaping medical conceptualizations of schizophrenia, it is also opening up to a new understanding of people's precarious life conditions, where emotional, biological, and cognitive fragility is intertwined with social and economic uncertainty. I then examine the extent to which psychiatrists have extended the goals of CRT to include psychosocial rehabilitation in order to mitigate not only the effects of cognitive deficits, but also the effects of limited social and professional integration encountered by patients. Finally, I conclude with a consideration of how CRT has become, for its proponents in France, a means to develop a policy and organisational project for French psychiatry.

Key words: Cognitive Remediation Therapy; Schizophrenia; Neurosciences; Psychosocial Rehabilitation; France

Introduction

Cognitive Remediation Therapy (CRT) for schizophrenia is a set of techniques aiming to optimise the cognitive abilities of people with chronic mental disorders and improving their daily lives.¹ This therapeutic approach was developed first in neurology to assist people in recovering their cognitive capacities after a stroke or brain injury (Boake 1989; Boake and Diller 2005; Parente and Stapleton 1997). Experimentation with CRT for the treatment of schizophrenia emerged in the 1980s and 1990s, at a time when the disorder was being redefined as a neurocognitive deficit disorder based on research in the cognitive neurosciences, underpinned by knowledge produced by functional brain imagery (Hogarty and Flesher 1999; Spaulding, et al., 1999). As was underlined by the neuropsychologist Walter Heinrichs: "Impaired cognition is now seen as a feature of schizophrenia that precedes, accompanies, and then outlasts a patient's symptoms and medical regimen. [...] Cognitive deficits are not only part of the schizophrenia syndrome; they are the primary expression of the schizophrenic brain" (Heinrichs 2005:229). According to this understanding of the disorder, now widely shared in contemporary psychiatry, deficits in cognitive processing (such as the ability to memorise information, learn, solve a problem, pay attention, plan actions, or interact with others) become the main target of therapeutic interventions (Andreassen, et al., 1999; Frith 1992; Goldberg, David, and Gold 1993; Heinrichs and Zakzanis 1998; O'Carroll 2000). This therapeutic approach has been further supported by

¹ Depending on the psychiatrists, CRT aims to "enhance", or "improve" cognitive functions. CRT is also known as "cognitive enhancement therapy", or "cognitive rehabilitation therapy".

research and clinical observations that these deficits, which affect more than 80% of individuals who have been diagnosed, do not respond to pharmacological treatment and have considerable repercussions on the lives of the people concerned and their social inclusion (Gold 2004; Green 1996; Green, et al., 2000).

CRT and the goal of optimising the cognitive abilities of people diagnosed with schizophrenia has extended the authority of the neurosciences in the management of human afflictions and reflect key transformations in contemporary psychiatry. CRT highlights the dominant position occupied since the 1980s by neuroscientific knowledge not only in the ways in which problems (such as psychiatric clinical categories) are approached and defined, but also in the modes of intervention that are thought to be the most relevant (see: Chamak and Moutaud 2014; Choudhury and Slaby 2012; Dumit 2004; Moutaud 2015, 2016; Pickersgill 2012; Pickersgill and van Keulen 2011; Rose and Abi-Rached 2013). Numerous studies have described how neuroscientific concepts, discourse, and technologies now contribute to shaping individuals' lives and experiences, and how they foster the deployment of care practices or public policies (Brennkmeijer 2010; Broer and Pickersgill 2015; Choudhury and Moore 2016; Moutaud 2011, 2016; Pickersgill, Cunningham-Burley and Martin 2011). In this context, CRT can be seen as a practice aiming to act on the brain – a "schizophrenic brain" as Heinrich put it – and its functioning, so as to modulate the psychology and the behaviours of people with this chronic mental condition. CRT finds its place in a new economy of the brain underpinned by contemporary neurosciences postulating that everyone need to pay particular attention to this organ, which contributes to determining individuals' condition and to shaping their existence (Moutaud 2016, 2018). It thus becomes an ideal target for intervention, both individual and collective, in the dual perspective of personal emancipation and the governance of populations, as described by sociologist Nikolas Rose and historian Joëlle Abi-Rached (Rose and Abi Rached 2013, 2014).

For other observers, such as sociologist Alain Ehrenberg, the moral authority of the neurosciences and cognitive sciences derives more from the fact that they couch contemporary social ideals in scientific language (Ehrenberg, 2020). According to Ehrenberg, the "social value" of the brain as a space of emancipation and individual responsibility (and not social control) is above all the manifestation of the rise in autonomy (i.e. the cardinal value of the ability to act by oneself) in a naturalistic idiom. From this perspective, the neurosciences and cognitive sciences are seen as providing individuals with a new language to redefine their own situation, take charge of their destinies and become agents of their own change (Ehrenberg 2014, 2020; Moutaud 2011).

I suggest that the development of CRT in psychiatry provides a point of entry to understand how the neurosciences hold technoscientific promises and produce social imaginaries in which social issues can be solved scientifically (Moutaud 2018). If CRT draws considerable benefit from its justification of knowledge, tools and discourse from the neurosciences and cognitive sciences, a point to which I will return, it has emerged as a practice that remains difficult to apprehend and even define on the part of its proponents. It calls on a range of explanatory registers, its boundaries are porous, and its efficacy is the subject of debate. It is nevertheless a practice that conveys specific conceptions of the nature of a psychiatric disorder and of what needs to be done, at clinical and organisational levels, to improve conditions for individuals suffering from schizophrenia. My objective is to describe how these issues are approached by the different CRT actors in France and how this practice raises questions about the entanglement of social, biological, economic and political factors as shaping the experiences and trajectories of individuals.

How, then, can one grasp a psychiatric technology as elusive as CRT as an object of research? As defined by Rabinow (2003), following Deleuze and Guattari (1980), I will draw on the notion of "assemblage" (*agencement*, in French) which reflects the great heterogeneity

of the components of certain research entities or objects. Rather than placing the emphasis on the heterogeneity of the discursive or non-discursive elements (or "semantic" versus "material", to return to the words of Deleuze and Guattari 1980) of an entity or object, what is stressed here is the relationships, the combinations, and the sometimes unstable links among the different entities that reorganise in order to give shape to an assemblage. Consequently, I will emphasize the contingent, protean, evolving and "effervescent" (Rabinow, 2003:56) nature of the CRT assemblage and the form it has taken on in recent years: a combination of elements (agents, techniques, concepts, new rationalities, knowledge, values, institutions, spaces, laws, policies, etc.) that precede the assemblage, but that reorganise and recombine in a novel manner around a particular practice (Ong and Collier 2005; see also Collier 2006; Dodier and Stavrianakis 2018; Marcus and Saka 2006). To do so, I will draw on ethnographic research conducted from July 2013 to December 2014 in one of the main hospital units in France dedicated to the development of CRT. In particular, this hospital unit played a central role in bringing together clinical research, patient care and teaching related to CRT. The team was established in 2008 by Caroline, its director and a psychiatrist who had been engaged in research on cognitive function in schizophrenia for some 15 years. In addition to Caroline, at the time of my research the medical team included two neuropsychologists, one psychologist and two nurses trained in CRT techniques. The unit had contributed to developing a CRT programme and translated others into French. In addition, the unit offered yearly CRT training sessions for health professionals so as to disseminate the technique. The CRT unit was also engaged in clinical research and maintained close structural and intellectual links with the neurosciences research centre in the university hospital.

During the 18 months spent with this team, I was able to observe all its activities: in total, more than 250 sessions using different CRT programmes, daily psychiatric, psychological and neuropsychiatric assessment interviews and weekly team meetings. I also attended 12 scientific events organised by the unit or in which members were invited to speak on CRT, its objectives, and its place in the French health system. I complemented these observations with 16 semi-structured interviews with CRT unit members and 13 with individuals who had participated as patients in CRT programmes in the unit, for whom I was able to follow up on their complete care trajectory. I also conducted 12 interviews with psychiatrists and neuropsychologists who use this technique in France and with practitioners in non-hospital medical and social facilities who were following certain individuals involved in CRT in the unit. Finally, I conducted a wide review of the medical literature on CRT and related themes.

This article is organized in four parts. First, I set out the practical and theoretical elements at the core of CRT to provide an outline of how it is seen, organised and practised and the ideals it carries, in particular in the French hospital CRT unit. Second, I describe some of the anthropological and epistemological tensions and ambiguities that arise from a practice claiming to address the vulnerability and precariousness of the lives of individuals with a chronic psychiatric disorder by acting on cognition. The third part comprises an analysis of the consequences of a practice that extends its objectives to psychosocial rehabilitation so as to become a potentiator of social and professional integration. Finally, I discuss how CRT has become, for its proponents in France, a means to development a policy and organisational project for French psychiatry.

1. What is CRT? From everyday exercises to brain plasticity

What is CRT? It is not unusual for this question to shape articles discussing recent advances, effects, or the theoretical foundations of a practice that has nevertheless been around for some 30 years in psychiatry (for example: Parente 2014; Wykes and Spaulding

2011). For the psychiatrist Til Wykes, one of the central figures in the area and the developer of one of the most widely-used techniques, CRT is an "umbrella expression" (Wykes and Reeder 2005:4), thus stressing the difficulty in defining its exact boundaries. In 2010 the Cognitive Remediation Expert Working Group defined CRT for schizophrenia as "a behavioural, training-based intervention that aims to improve cognitive processes (attention, memory, executive functions, social cognition or metacognition) with the goals of durability and generalisation" (Wykes, et al., 2011:472). This broad definition, regularly taken up in scientific publications on CRT, seems to have reached a consensus.

Thus CRT covers a range of cognitive training programmes, followed by "patients" in a medical environment over several weeks, with a "therapist" trained in the technique.² The "therapist" can, depending on the team, be a psychiatrist, a neuropsychologist, a psychologist, a physiotherapist, or a nurse. The principle of CRT is the follow-up of a "patient" over several weeks to develop efficient strategies to solve cognitive exercises. In line with the "goals of durability and generalisation" of the expert working group (Wykes, et al., 2011:472), the participant is then to transfer these strategies developed during the sessions to his or her daily life, so as to cope with situations that cause difficulty, and to hope for social inclusion. Thus the task for practitioners and participants is to concentrate on impersonal processes (targeting cognitive dysfunctions) that are to be transferred to concrete problems (situations in daily life). I will first sum up the organisation of a "patient" care in the CRT unit.

a. Outlining CRT: gradual, impersonal, repetitive

A person diagnosed with schizophrenia is generally referred to the team by his or her psychiatrist or else by a psychiatric facility. Caroline, the psychiatrist, first meet the person for a clinical evaluation in the course of which she reviews the medical history so as to determine whether the "patient's profile" corresponds to one of the unit programmes. Three specific dimensions are carefully explored: firstly the person should be "stabilised", that is to say that his/her treatment is efficacious, without major cognitive side effects, and he/she no longer has psychotic episodes (since these elements could interfere with the person's cognitive abilities and thus with the CRT programme); secondly the psychiatrist endeavours to apprehend the person's cognitive difficulties, whether he or she is able to identify them, and if he or she expresses "complaints" relating them. Thirdly the person should have a "project", around which the CRT programme will be articulated. This last point is central, and I will return to it later in more detail.

The "patient" then spends half a day with one of the two neuropsychologists in the unit, in the course of which her/his cognitive abilities are fully assessed. The purpose is to draw up a "patient's cognitive profile" by identifying the specific cognitive dimensions that cause difficulty, as well as the strengths that she/he could mobilise to overcome these difficulties. Depending on this cognitive profile, the person is then oriented towards one or other CRT programme.

Two main programmes structure the routine activity of the team (who was nevertheless developing and experimenting with four others at the time of my research). These programmes are generally spread over 2 to 3 months with two one-hour sessions a week with one of the nurses trained in the techniques (amounting to more than 20 hours in all). One programme uses "paper-and-pencil exercises", the other uses a computer. Both entail a subdivision into "modules" corresponding to different cognitive functions that are to be specifically targeted and trained. There are several levels of difficulty for these exercises, which the participant will graduate through. For example, one "paper-and-pencil exercise"

² The terms in inverted commas (excepting publications quotations) are terms used in the vernacular by the actors.

consists in picking out a letter (for instance an E) on a page covered in letters of different sizes and laid out in disorderly manner. Another consists in reproducing a complex geometrical figure in reversed form. One computer exercise requires the subject to memorise the ingredients, amounts and containers for a cocktail in a limited time span, and then to reiterate them.

As mentioned in the literature, this teaching material "has no personal relevance to the individual and is neutral in its affective content" (Wykes and Van der Gaag 2001:1227). The main idea is to generate a situation, leading the "patient" to "produce" an efficient "strategy" to solve the problem. If the "patient" does not succeed, the nurse is to guide the "patient" towards a strategy, help him or her to apply it correctly and then to reproduce it, alongside a gradual increase in the difficulty of the exercises. The aim is also to enable the person to change to another strategy if the one deployed no longer works or fails (known as a "cognitive flexibility").

It should be noticed that these sessions take place in a school-form setting (as described by Muriel Darmon for post-stroke rehabilitation practice: 2020), and are repetitive or even tedious. Before each exercise the participant is asked to describe what can be seen on the sheet of paper or the screen. He/she is then asked to read aloud the instructions accompanying the exercise, and then to reword the objectives. The participant then states the method he or she intends to use, breaking it down into steps. Once the exercise is complete, participants are to check that they have not made any mistakes, and also that they have done what they said they would do. According to the practitioners, this method, applied 2, 3 or 4 times within a session according to the number of exercises completed, is intended to counterbalance people's impulsiveness, favour their concentration, and ensure that they process the various information exhaustively, and so forth. When the participant is to read and understand the instructions, for instance, the nurse can cover part of the sheet of paper or the screen to avoid the person being put off by the excessive volume of information, or being tempted to start the exercise without going through the different steps.

As a complement, the "patient" is required to do "homework". This is of two types: either a paper copy of the exercise used in the session; or a "home exercise" that is to say an exercise that is suited to the needs and desires of the person, and requiring the cognitive skills that have been called on in the session. This can concern a cookery recipe, reading and article, or watching a film and making a synopsis afterwards, or again carrying out domestic tasks (tidying or sorting clothes, administrative papers, etc.). The "home exercise" can also be related to the person's project (drawing up revision cards for an exam, for instance). Here again the person is expected to apply the strict methodology established in the CRT session and to transfer the strategies established. I will return to this later. At the end of the programme the person is subjected to another battery of neuropsychological tests so as to assess any improvement.

b. Placing neuropsychology at the heart of the approach

While the theories behind the development of CRT and attempts to explain its effects are various (Wykes and Spaulding 2011) the team that I observed bases its use, like many others, on the neurodevelopmental hypothesis of schizophrenia (see Hogarty and Flesher 1999, Owen, et al., 2011). To sum it up briefly, this hypothesis considers schizophrenia as the result of an interaction between individual's genetic predisposition for the disorder and exposure to environmental risk factors. The pathological process then affects the neuronal development of the brain, translating into structural and functional abnormalities that cause the disorder, and also cognitive deficits (Andreasen, et al., 1999).

This neurodevelopmental approach is interwoven with a second component that seeks to found the relevance of CRT on a scientific basis, that is to say the observation, or at least the theoretical interpretation of the effects of CRT on brain plasticity (Bon and Franck 2018; Cella, Reeder and Wykes 2015; Keshavan, et al., 2014; Kurtz 2012; Penades, et al., 2013; Wykes, et al., 2002). It can be recalled briefly that brain plasticity, in a wide conception, refers to the fact that embryogenesis and the production of new neurones continues throughout adult life. It also refers to the fact that the brain is thought to be able to reorganise its functional networks and connections, in particular in reaction to a traumatic event or a pathogenic environment. This phenomenon assumes that the brain is not fixed in form, in particular regarding its pathological states, but remains malleable and is constantly re-configured. It is thus possible to cause a breaking-off of a process or a biological destiny previously considered to be immutable (see Rose and Abi-Rached 2013:47-52). Once the disorder and the cognitive deficits are established, CRT could re-configure what was biologically programmed during the neurodevelopmental process.

This neurodevelopmental approach in the CRT unit originates from the intellectual trajectory of Caroline, its director, who specialised from the start of the 1990s in research in the cognitive sciences and cognitive dysfunctions in psychiatric disorders (for instance she conducted research in oculometry on measures of distractibility in schizophrenia). This orientation later met the clinical and scientific interests of another team in the hospital neurosciences research group. This research team, headed by Stéphanie, a psychiatrist and researcher in neurosciences, was specialised in the early detection and prevention of psychosis. Caroline gave me an account:

“Stéphanie had focused her reflection on neurodevelopment. She had reached the conclusion that there were rather odd people who were not really like schizophrenics. Not knowing what they really were, she started to say that we should explore further. At the time I did not have a neuropsychologist on the team, and it was when Marie [a neuropsychologist now in the unit] joined that there was genuine neuropsychological reflection. And we then started to go deeper and in more formal manner into neuropsychology, considering that on the one hand there would be schizophrenic patients, and on the other patients with autistic or neurodevelopmental disorders, so as to place our considerations in the area of ‘adult psychoses’. This enables a conjugation of research and neuropsychology alongside the development of innovating care techniques”.

For instance, Marie’s doctoral dissertation in neuropsychology was exploring the cognitive profile of people diagnosed with a 22q11 deletion syndrome, a congenital chromosome abnormality that increases the risk of schizophrenia. Alongside, Marie was developing a care plan suited to these cognitive clinical profiles. The team was also conducting other clinical research on fine motor skills among individuals attending CRT. Motor disturbances are indeed considered to be neurological soft signs, potentially predictive of the illness and its outcome among people diagnosed with schizophrenia (Bachmann and Schröder 2017). An improvement in these dimensions could thus reinforce the hypothesis of an effect of CRT on brain plasticity.

Thus the neurodevelopmental approach implies a specific conception of the organisation of care in CRT and its links with neurosciences research, in line with a “bench to bedside” model for medical innovation (Medalia, et al., 2019). But it is also a specific conception of the nature of the disorders. CRT sets neuropsychology, its knowledge and its array of standardised tools for the evaluation of cognitive skills and symptoms, at its centre. At the same time it extends its sphere of authority to a spectrum of clinical situations involving identified cognitive disturbances and with a similar neurodevelopmental trajectory:

at-risk mental states or prodromal stages of psychosis (where cognitive disturbances may be warning signs of the disorder and may also predict functional recovery); as well as autism spectrum disorders or genetic diseases where affected subjects present symptoms similar to schizophrenia, and where CRT could contribute to a better understanding and characterisation.

What then is CRT? What emerges is a practice that is hinged on theories derived from biological neurosciences, mobilising assessment tools and theories from neuropsychology. It is a programme that is part of a more general movement in the last 30 years, with the rise to prominence of the neurosciences and attempts to make psychiatry more scientific. There is indeed the will to turn it into a medical discipline basing its actions on fundamental knowledge, standardised tools and scientifically tested techniques complying with the principles of evidence-based medicine (Ehrenberg and Lovell 2001; Henckes 2019; Moutaud 2012, 2016; Pickersgill 2012, 2014; Rose 2015; Rose and Abi-Rached 2013; Rüppel and Voigt 2019). For CRT proponents, the aim would be to better describe what people are suffering from, to review diagnostic categories and classifications, to determine clinical profiles based on precise measures and assessments of behaviours and abilities. This then enables standardised, and also "personalized" care to be developed (Cella, Reeder, and Wykes 2015), in other words CRT programmes that are specifically suited to the abilities and deficits specific to an individual.

Behind these ambitions for CRT lies the idea that these individuals have lost something because of the disease, that they may not ever completely recover it, but that they need help to move in that direction by acting on their brain functioning. We will however see that the use of CRT is not restricted to action on the brain and cognition.

2. Overcoming the precariousness of life, overcoming the ambiguities of CRT

a. Mr U: the mundane conditions of everyday life

I was able to meet and talk with Mr U a number of times in the course of his visits to the CRT unit, as well as outside, several months later. He was about 40, and at the time of our first encounter he had just lost his job. He described himself as extremely sensitive to "stress" and "anxiety", which he described as "spoiling everything" and "necessarily greatly altering patterns of reasoning". He went on to say that it was "something that is experienced very deeply". When I asked him for an example, he talked about an event that had occurred the day before:

Mr U: Yesterday I enlisted at the job centre, I had prepared all the documents, in the right order. I panicked completely.

I: Why?

Mr U: Because some of the forms had been filled in by my former employer and he had used Tipp-Ex and all that. It should have been redone. So the man in charge came and told me to calm down. They sorted it. But even with the right documents, they were asking for others. Sitting there in front of him I was looking for them but not finding them. He then went away, I looked again and I found them. Stress really makes you lose your hold. It's not an isolated aspect of the disease, it affects everything.

This event seemed to still be affecting him considerably. When he recalled it, his speech became disjointed and broken and the content less precise. Apart from the emotional impact left by this experience, what had impressed him resided in what it revealed about his condition, this vulnerability when faced with stress, preventing him from taking action and overcoming situations that he experienced as ordeals or "constraints", as he said, generating

emotional tension, vulnerability and uncertainty. This realisation, and the consequences of this vulnerability in his life and in his experience of CRT were returned to throughout our first encounter. Returning to the thread of his therapeutic trajectory, a few minutes later he told me:

"Even so, there are symptoms that mean that at times I stay shut up at home. I have things to do, I don't know how to organise, and I stay like that – not necessarily feeling unhappy – for three hours, doing nothing and wondering where to start."

He said that the CRT programme that he had just taken part in had given him "keys", that he had integrated: "It enabled me to go ahead with things more easily. As if they were landmarks that I can cling to". It enabled him to "learn how to plan according to outside constraints".

I: How, for example?

Mr U: For instance official papers. We already talked about it. For me it's something that makes me anxious, so I don't do it. Because I'm weary. And it always involves relations with something outside or an administration that is not personal. It makes it seem more like a wall. Feeling as if you're a number, having to do something and needing it to survive, because we depend on allowances, a sort of blurry entity.

He was referring to an exercise that is not exactly a module in CRT programmes, but one of the "home exercise": sorting the post. The nurses suggested helping CRT participants to sort their post or their administrative papers and to process them correctly. In practice, they taught individuals to get organised to go through the documents, read them thoroughly, extract the essential information, sort them according to the degree of urgency, classify according to what could be done immediately and what required further proceedings, and finally to store and classify in such a way as to be able to retrieve them easily. This also involved planning the timing of each of these actions.

This exercise is not intended solely to combat procrastination, which can affect any of us (although the principle of cognitive optimisation underpinning CRT presupposes a continuum of conditions which blur the boundaries between normal and pathological: everyone could be concerned by these problems of cognitive management in daily life, and the CRT exercises could be beneficial for everyone). While the "sorting the post" exercise is not formalised, it is easy to organise. For practitioners it is above all a lever to broach situations that generate anxiety and stress for individuals involved in CRT programmes, as described by Mr U, although it is often people's daily living conditions that are involved. Sorting the post and administrative paperwork is directly linked to the on-going issue of allowances, or to eligibility (such as disabled or job-seeker status and the related allowances, or social allowances that people can claim). It is also linked to compliance with the administrations requirements for the payment of taxes and bills (water, electricity, rent, etc.). In this situation, as emphasized by Mr U, what is very practically at stake is the means of existence. Thus he told me he was anxious about his financial situation, which he would like to be less precarious, with accommodation "suited to [his] means". It is the fragility and precariousness of these individuals' living situations that is highlighted, and is at the heart of the CRT exercises. This precariousness of their lives is a complex entanglement of biological, emotional, and cognitive vulnerability and social and economic uncertainty.

b. Is there a difference between psychiatric and cognitive disorders?

The "home exercises" proposed by the CRT unit were varied, but called on the same motivations and were set up to address with people's precariousness (be it social, biological,

cognitive or emotional): discussing or bring out problems encountered in daily life and stemming from the illness, so as to learn how to overcome them using an approach centred on cognitive abilities. Following a recipe is not only a matter of planning a complex cognitive task, it also means broaching the subject of nutrition, diet and food quality for people who may have difficulties in these areas because of their medication, or because they do not have, according to the team's assessment, the ability to make their own meals (i.e. to perform an action with high cognitive cost, or quite simply the ability to initiate these actions, or again because they have not understood the economic and nutritional benefits, and so forth). Sorting and folding washed clothes in the cupboard is the occasion to discuss hygiene. Going to the cinema and making a synopsis of the film is not only a memory exercise, it is also an encouragement for the person to get out, mingle with the crowd, or even have the company of a friend and "socialise" (a recipe and the organisation of a dinner can serve the same end and help to combat isolation). All these exercises are aimed at optimising the capacities of individuals and improving their autonomy so as they can reintegrate into the community of citizens (see: Pols, 2006). Expectations and benefits are heterogeneous, but need to be systematically recalled, the strategies should be put into words, the actions broken down, and the method rehearsed so as to transfer it to a variety of situations.

As I have said, with CRT, practitioners are focusing on impersonal cognitive processes that are to be transferred to concrete problems involving the practical dimensions of people's existences, in situations where they are confronted with daily difficulties preventing their social inclusion. It is thus a "practical subject" that emerges from the practice of CRT. This "practical subject", according to the sociologist Alain Ehrenberg, is at the heart of the ideals of the cognitive neurosciences: "The individual, whether schizophrenic, depressed, hyperactive, or of sound mind, is systematically presented as a practical subject confronted with problem-solving and decision-making by adjusting the means to serve the ends. So, the language of cognitive neuroscience is a language of action" (Ehrenberg 2020:10). For Ehrenberg CRT is a concrete application of the cognitive neurosciences ambition to produce a regular, reliable human being, who can be trusted, via "exercises in autonomy" enabling him to acquire skills or habits (Ehrenberg 2020:161)³.

In practice, this transformation entails exercises and rehearsal which make up the main part of CRT sessions. The multiplicity of lexical occurrences associated with "automation", "integration", "repetition", and "training" in the scientific literature or during CRT sessions to describe the processes at work and the nature of the therapy is revealing a particular conception of this cognitive care based on drilling and exposition, inherited from behaviourism.⁴ These principles are referring to a procedural conception of human action and of the individuals' everyday life. Each action is sequenced and segmented into a series of steps to be completed, which converts action into a reflex. Drilling, repetition, and automatism are intended to enable the individual to learn to cope with his or her emotions, to control the stress generated by the social and material environment, to organise and to reach decisions that relate to his or her very mundane or ordinary difficulties.

³ For Ehrenberg, the ideal of the man/woman of action of the cognitive sciences who acquires confidence through exercise and repetition or rehearsal should be understood in the light of the ideal of the psychoanalytic "examined life" and the practices of elaboration of discourse to give meaning to life (Ehrenberg 2020).

⁴ Two examples among others: "Home exercises are useful to promote the transfer of strategies to daily life and their subsequent automation" (Peyroux and Franck 2014:8). "The neurocognitive training consists of computerized exercises collaboratively performed by patient dyads, and the group-based social cognitive training centers on learning exercises that lead the individual to process social information in an automatic, 'gistful' way" (Fiszdon and Reddy 2012:736).

CRT principles are based on the "drill-and-practice" method, a learning and teaching strategy "rooted in the theory of behaviorism" characterized by disciplined systematic repetition and exercises (Lim, Tang and Kor 2012).

Here the "extraordinary" nature of individuals' condition, to return to Janis Jenkins (2015), their extreme and sometimes uncanny experiences, would thus be reduced to cognition, its processes and its dysfunctions. The case of Mr U has pointed that the notion of "precariousness" (or "precarity") is "more precise from the point of view of the person's immediate experience" (Jenkins 2015: 13) than the notion of vulnerability as conceptualized in neurodevelopmental approach of schizophrenia to which CRT unit members referred to describe the condition of people living with schizophrenia. Apprehending the alterity of individuals' situations through their biological and cognitive vulnerability (or their "vulnerable brain" as Caroline sometimes said), through a cognitive lens and a neurological deficit perspective would impoverish the variety of forms of life pervading these experiences. These experiences of people living with mental illness are characterized by the "struggle" in which they engage to maintain the stability of everyday life or to prevent their world from collapsing (Jenkins 2015: 13).

A similar point was made by Louis Sass (2003, 2004) concerning the psychiatric theories defining schizophrenia as "a deficiency or decline in cognitive and neurological functioning" (Woods 2011: 164). According to him, these theories are promoting a conception of the mental life and subjectivity of people suffering from schizophrenia as lacking "complexity" to the extent that this mental life could then be "readily be described in quantitative and pure deficit terms: as a mere dimming or diminishment of higher or more reflective forms of conscious life", denying the "the qualitative specificity of schizophrenic experience" (Sass 2003: 304). These elements can also be found in the only social sciences research on CRT to date (to my knowledge). Camilo Venturi refers to a "laboratory schizophrenia" to describe the disease as it is conceptualized in CRT practice, through the prism of neurodevelopment (Venturi 2014:174-175). The result is a portrait of a neurological schizophrenia (the clinical expression of the "schizophrenic brain") that is disconnected, in weightlessness from the day-to-day reality, from the living conditions and the ordinary experience of individuals. Caroline herself, in one of our interviews, described their approach calling on neurodevelopment alongside a process of objectification of individual cognitive skills as "neurological".

A fundamental ambiguity lies at the heart of CRT that makes it difficult to apprehend, and certainly contributes to the persistence of questions on its definition. This ambiguity is that of a form of care where the theoretical framework and the method combine practices, approaches or dimensions of the illness or of people's lives that seem difficult to reconcile: personal and impersonal, social and material precariousness and cognitive mechanisms, daily intimacy and behavioural learning methods, laboratory and real-world conditions, neurology and psychiatry, social medicine and neurosciences, and so forth. Protagonists in CRT also note these ambiguities. Stéphanie, to legitimise the use of CRT, thus remarks on "the present enrichment of psychiatry by the cognitive neurosciences approach. But that is not all". She continues:

"We are setting to music an evolution in recent psychiatry, consisting in recognising that a large part of psychiatric disorders are cognitive. But it is a new neuropsychiatry that has not forgotten to be social. The difference between psychiatry and cognition is still the illness and the suffering".

How can CRT practitioners then combine cognitive optimisation and social medicine and address human suffering with paper-and-pencil exercises or a computer programme?

It does seem that cognitive exercises are not sufficient, and it also seems impossible for the different protagonists to focus solely on the procedural dimension in people's lives. To respond to these objectives, we will see that CRT needs to extend its objectives further to

become a method positioned at the intersection of several worlds and spaces in psychiatric care that are needed to accompany care trajectories and to improve them.

3. How can "modest" effects be "boosted"? Extending CRT objectives beyond cognitive optimisation

a. Mme B: a diary for life

Mme B was not yet 20. I started to observe her CRT sessions once they were already under way, intrigued by Camille, the nurse, who appeared to be encountering problems in her management. Mme B was planning to sit exams to enlist in a perfumery school. Camille described her as being "very disorganised". According to her, this could be seen from the fact that she systematically arrived very late for the sessions, and to make matters worse did not do her homework.

In an attempt to remedy the lateness, Camille started to call her 45 minutes before the start of the session, corresponding to the time she needed to reach the hospital. Camille told me she hoped to see the situation evolve, so that it would be Mme B who called before she set out, and that she would end up coming on time. However Mrs B continued to arrive very late. In one of the sessions I observed she arrives 45 minutes late.

When Camille asked her for the reason, Mme B remain allusive and confused. She ended up by saying that the day before she felt "really unwell", and that today she didn't feel well, talking among other things of the revisions for the exam. The discussion lasted several minutes. Camille wanted to understand what Mme B had actually done between the moment when she called her and the moment she set out from her home, but to no avail. Everything remained confused. Camille finally gave up, and asked her if she had brought her exercises, but she had not done them. "I didn't think of it, I wasn't in the mood", she apologised. Camille tried to find out more about her organisation and how she could manage to remember things. Gradually they reached the idea of noting everything down in her diary.

Mme B then took out her diary. It is a tool that is required by the team when a person undertakes a CRT programme. At the first session, the nurses ask them to acquire one to help organise their daily lives. But here Camille encountered a new problem: she could not understand how Mme B kept her diary. The different events noted in a day were indeed listed on the appropriate day, but with no apparent logic and no reference to times. "I remember them", replied Mme B. Then Camille tried to explain how she should proceed: note down events alongside the time, with as much information as possible (names, places, telephone numbers, etc.). Then she encouraged her to look in her diary for the appropriate moment to do her exercises before their appointments. Once agreement was reached on this, Camille asked her when she looked at the diary in the day. It then appeared that Mme B only rarely consulted it. "I remember" she said again. Camille seemed at a loss, with unusual silences in the course of the session. She finally suggested that for each of their appointments, Mme B should note down not only the time of the session, but also the time when she would call her. "That's the time you need to be ready to leave".

Finally she explained: "This means in fact that you are missing out on the remediation. If you go on like this, there won't be any point". She then used her key argument, that everything that they implemented in CRT, whether the exercises as such or the different steps in the organisation in her work and daily life, were intended to prepare her for entry into the perfumery school: "When you start the courses, you will have homework to do, how will you manage? It's now you have to start. It's now that you have to take it all in. It's a pity because you have advantages, but you are compromising them".

b. A new equation: CRT = psychosocial rehabilitation

Mme B's situation and the turn taken by this CRT session lead on to a central element in the practice as it has been conceived and justified by its advocates, and in this CRT unit in particular: CRT "should be articulated with a rehabilitation project", to quote Caroline. It is the centre of her CRT "philosophy" as she presents it. The horizon of care provision by CRT in this unit extends beyond the optimisation of cognitive abilities, aiming for social inclusion. In the words of a psychiatrist, CRT has to be "integrate into the overall recovery plan, to support rehabilitation in a manner that facilitates individual recovery". As another psychiatrist put it during an interview: "remediation is meaningless if it is not understood as the strengthening of a person's resources, and thus the idea of rehabilitation". This is why the CRT unit sets the condition, for the entry of a participant into a CRT programme, of the definition of a "project", around which the care will be articulated so as to see it through. As it was sum up by a psychiatrist: "What do you want to do in the next months? CRT will help you do that". This "project", in the situations I was able to observe, is most often understood as a return to professional or school activity (starting a course, taking on a job in a sheltered workshop, sitting an exam, returning to studies, adaptation of the work post, etc.). In rare instances, it can also concern a leisure activity that mobilises social and/or cognitive skills (joining a library, writing a book about one's experiences, taking music lessons, etc.).

This notion of a "project" mobilised by the team is closely interwoven with concepts of "recovery" and "psychosocial rehabilitation" (where "psychosocial rehabilitation" can be defined as the operative notion of "recovery" in mental health policies). I will not return here in detail to this notion of recovery and the many senses it entails, the subject has already been widely discussed (see Jacobson 2004; Pilgrim 2009; Woods, Hart, and Spandler 2019). I will however endeavour to determine the consequences of the mobilisation of this notion in this context. We can simply note that the main idea in recovery in its usual acceptance involves a valorisation of empowerment and individual choice. A person with a chronic psychiatric disorder can move beyond his or her condition by regaining control of his or her trajectory, can overcome the illness, and live a fulfilled life. In recovery, the person's evolution extends through a trajectory or a life project in the course of which his or her experience is valorised, rather than over a trajectory of care, or disease, or a clinical history that is decreed by medical authority (Jacobson 2004).

Since the 1990s, these concepts of "recovery" and "psychosocial rehabilitation" have been "the hegemonic guiding principle" of public mental health policies in several countries (Braslow 2013:783), around which psychiatric practices and structures are organised (in the case of France since the *Loi du 2 janvier 2002* et *Loi du 11 février 2005* [*Law of January 2nd 2002* and *Law of February 11th 2005*], and also the *Plan psychiatrie et santé mentale 2005-2008* [*Psychiatry and Mental Health Plan 2005-2008*]). In France the "project" or "rehabilitation" rhetoric pervades the objectives set out by medico-social units. Within this rhetoric, it is the notion of "project" that operationalises rehabilitation by enabling issues specific to each life situation and to the variability of individual or organisational resources available to be collated into a single precise objective. This rhetoric is omnipresent, whether in the discourse of practitioners or in the medical literature on CRT. Thus it is significant that we can observe a recent tendency among French CRT proponents to refer to their practice not as "a promising tool for the treatment of schizophrenia" (Demily and Franck 2008) but as a technique for "psychosocial rehabilitation" (Franck 2018)⁵. CRT and rehabilitation become synonymous and this shift is neither neutral nor without consequences on at least two levels.

⁵ For instance, the 2019 edition of the CRT unit annual workshop was entitled "Rehabilitation: a paradigm shift in society".

Firstly because it creates confusion as to the objectives of the care provided, blurring even further the nature of the practice and the evaluation of its effects. Determining CRT effects then needs to take account of both the improvement in cognitive abilities of the person and of the achievement of the "project". It was not rare for the team in the CRT unit to valorise one rather than the other, according to the situation. Nevertheless, basing the success of CRT programmes on the completion of a rehabilitation project entails the risk of envisaging it from a "conformist normative position" already described by Corin (1990:167; see also Marquis 2019). This bias can also come into play upstream in the selection of individuals suitable for CRT: projects can be subject to moral judgements or normative expectations on the part of medical teams, judging the projects as realistic or otherwise, or compliant with outside criteria that have not been set out in the care relationship but which structure the deployment of the practice (for instance medico-economic issues, as we will see).

Secondly, turning CRT into an operator of recovery and project completion entails a profound change in the nature and the objectives of the care and in the therapeutic alliance. As Nicolas Marquis put it: "The use of the project category allows the caregivers to implement the ideal of a patient as a partner rather than an object, and the division of tasks arising from it. The project is an exterior entity of which the patient is seen as the depository: caregivers are not working on the patient, but on the project with the patient" (Marquis 2019). Thus working on a project is turning the "patient" into a partner with whom the caregiver acts, rather than with the "patient" reduced to his or her symptoms on which the therapist takes action. It also valorises an equalitarian model of the contract articulated around empowerment and autonomy, in opposition to the asymmetrical violence of constraint that continues to characterise some of psychiatric practices (Brodwin, and Velpy 2014). For the partner it recognises abilities, a viewpoint and experience to be mobilised in the therapeutic relationship. But it also turns the therapist into a coach, who like Camille with Mme B helps the person to develop a potential, and to convert the "benefits" and the methods acquired in CRT into skills for their future life.⁶

Nevertheless, the ambition to articulate CRT with a rehabilitation project should not be analysed solely as a care philosophy issue, it is also a medical and scientific argument: what is at stake is the clinical efficacy of CRT.

b. Closing gaps between "experimental" and "real-world" conditions

The issue of the evaluation of the efficacy of CRT and the equally complex question of the maintenance of its effects over time have pervaded its history since its applications in neurology (Medalia, et al., 2019; Parente and Stapleton 1997). The issue has indeed become polemic, combining with the question of its definition (Bilder 2018; Bryce, et al., 2016; Harvey, et al., 2018; Keefe and Pani 2018). If we remain in the domain of its application to schizophrenia, the effects observed on the cognitive abilities of people having completed a CRT programme are not particularly obvious. The clinical trials and meta-analyses do show a statistically significant improvement, but it remains "small", "modest", or "moderate" (McGurk, et al., 2007; Wykes, et al., 2011). In short, CRT could be efficacious for limited periods in improving the cognitive performances of individuals in specific exercises for which

⁶ I will not discuss this point, but the position of the nurses in the unit towards the term "coach" was ambivalent. It was for instance criticised for denying, to their mind, the therapeutic dimension of their work. But they were also able to appropriate it to valorise the intensity and inventiveness of the care they provided, and their considerable implication in the management of the lives of their "patients" (the term they used) as was the case for Camille with Mme B, or again the quality of the relationships established with them (distinguishing themselves from the supposed distance required in a patient/therapist relationship).

they have been drilled, but that is all. In addition, concerning the effects of CRT on brain plasticity, there too the evidence is still "limited" and "scarce" (Cella, Reeder, and Wykes 2015:147-148). Of similar concern is the fact that the effect of CRT on cognitive abilities may not be maintained over time if people do not have the opportunity to practice their "newly acquired skills" (Medalia and Saperstein 2013:513). "Patients lose what they have acquired. If the person returns home and spends his time watching television, there is no point" remarked one neuropsychologist abruptly. These results raise the difficult question of the modes and the abilities for transfer of these "benefits" from CRT and their maintenance once outside experimental conditions and hospital units, in people's daily lives (or in "real-world conditions", for CRT proponents: Medalia, et al., 2019). This was what was worrying Camille with Mme B.

However, towards the end of the 2000s research showed that the effects are maintained or "boosted" (Wykes, et al., 2011:482) if CRT is associated with other rehabilitation programmes, or if the person later develops a project for integration or return to work (Bowie, et al., 2012; McGurk, et al., 2007, 2009; Kurtz and Richardson 2012; Wykes, et al., 2011). These results were a turning-point in the domain for its medical but also economic justification. Several studies thus set out to show that people having followed CRT subsequently work longer hours (Bell, et al., 2005, 2008; McGurk, et al., 2007; Wexler and Bell 2005), or again that it reduces the number of cognitive behavioural therapy sessions (Drake, et al., 2014). For some clinicians I met, these indicators are more "concrete", "tangible", and a better reflection of the state of individuals than neuropsychological evaluations, whose ecological validity is often debated (Chaytor and Schmitter-Edgecombe 2004).

Caroline confessed:

Caroline: At first I didn't believe in the remediation.

I: Really?

Caroline: Not at the start. When I read the literature I told myself that the minute you stopped it would be back. After working for 15 years on cognitive function... Then, when I had read the most recent papers, in particular McGurk in 2008 [McGurk, et al., 2007 or McGurk and Wykes 2008] who was starting to talk about the vocational programme, that is to say a support programme, I thought: "If CRT serves as springboard, perhaps it could work".

For its proponents, CRT then became a potentiator for social and professional integration, a technique for optimising not only cognition but also care and psychosocial rehabilitation. I will now describe how this view has evolved in recent years to become a powerful medico-economic argument in a broader discourse on the part of the protagonists of CRT on the subject of mental health policies in France and the organisation of care. If the overlap between the discourse among CRT practitioners concerning CRT and that concerning psychosocial rehabilitation can be seen both as a care philosophy issue and as a medical and scientific argument, it is also a policy issue for the reconfiguration of mental healthcare that is questioning the social usefulness of CRT.

4. "Modest" effects but ambitious policies: how CRT became an organisational innovation

In this last part, I describe how CRT and its rehabilitation objectives require for its success the coordination and mutualisation of resources of university hospitals psychiatric departments, and health, medico-social and social facilities. I argue that while this ambition of coordination and mutualisation derives from a constraint (optimising and maintaining the

effects of CRT), it is underpinned by a policy and organisational project for French psychiatry and the welfare state. More precisely, while I have earlier exposed that the proponents of CRT in France do not limit themselves to a model of medical innovation "from bench to bedside", and that they organise a translation to the "real world", we will see that they also extend this translation to public policies. This translation is intensifying the elusiveness and porousness of CRT assemblage in opening new spaces of interventions where new values are given to the practices and actors "thus connected to each other" (Ong 2005:338).

a. Disseminating "springboards": translating the CRT "philosophy" into public policies

Concerning the articulation between CRT and rehabilitation, Caroline told me: "On that subject, I thought to myself, 'yes, there is something to go into', because there is something that could work if it is used as a sort of springboard to go further. But a springboard means that where you jump everything needs to be ready for you to land, because otherwise you'll land on your face [laughs]. So it was a big deal, unless we used the resources of the [French] sector organisation, which are very good".

For Caroline, and other proponents of CRT in France and in English-speaking countries, CRT, its deployment and its objectives have become nothing less than a tool and a lever to reappraise the distribution of health care services and to attempt to have an impact on national health policies and the organisation of the mental health care system. It is more particularly the interconnection across medical, medico-social and social structures that is at stake, as these structures are to support the individual and his/her rehabilitation project over and above the hospital units developing CRT programmes. These challenges have a bearing on the way illnesses are conceived, as we have seen, while at the same time mobilising a specific philosophy of care and national solidarity.

The French mental health care service and the mental health care system are organised on a geographical and demographic basis. This organisation, known as "the sector" (*le secteur*) is intended to offer publicly accessible care for a given population of 70 000 to 100 000 people in a determined geographical area over the whole French territory. In its initial project, the strength of this organisation was that it ensured proximity, continuity and coordination of care between ambulatory and hospital care, and between prevention and psychosocial rehabilitation (Leguay 2017; on the history of the French sector, see: Henckes 2007, 2009, 2011). There were however a number of recurrent criticisms of this organisation. The main one is the inadequate coordination between health facilities and medico-social facilities, or again the illegibility of the organisation for users (see for instance the following institutional reports: Centre de Preuves en Psychiatrie et en Santé Mentale 2015; Haut Conseil de la Santé Publique 2016; Laforcade 2016). For the advocates of CRT in France, the system fostered "a generalised and standardised view of care", hospital-centred and cure-oriented, hampering any opening-up to innovation or to alternative modes of organisation (Franck 2018: 4).⁷

In fact, Caroline and the researcher and psychiatrist Nicolas Franck, the main proponent of CRT in France, took up positions as "entrepreneurs" in mental health policies.⁸ They are

⁷ My translation from French.

⁸ Nicolas Franck is a French psychiatrist and cognitive science researcher. He is the most prominent figure in CRT in France and a prolific author on the subject. He founded and presides the French Society of Cognitive Remediation, and was the instigator of a CRT diploma. This all aimed to disseminate and promote the technique in the medical world. He was also the founder and directs the resource centre for psychosocial rehabilitation and cognitive remediation at the Centre Hospitalier Le Vinatier. He has been consulted or was involved in several recent institutional reports on the organisation of the French mental health system, where CRT has a fairly prominent place (see: Centre de Preuves en Psychiatrie et en Santé Mentale 2015; Laforcade 2016).

"entrepreneurs" and not only CRT proponents or advocates, or economic actors who serve their own interests, since they are "actors playing an active role in the transformation of institutional rules" (Bergeron, Castel, and Nouguez 2011:264).⁹ Caroline and N. Franck act as "entrepreneurs" who structure the social space in an old French use of the term that can refer to someone who "entre-prend" (from the Latin "inter prehendere": "between" + "to take hold", "to grasp"): as they shape CRT and its "philosophy" and take control over it, they stand on the boundaries of several social spaces and conflicting rationale which they intend to negotiate, to reconcile and to connect. The two clinician and researchers, in charge of two of the main CRT hospital units in France, have indeed produced numerous communications and publications where they set out reflection on the (re)organisation (its "modernisation", according to them) of the national mental health system and the place that CRT should have in it (see: Franck 2018; Morin et Franck 2017; Franck and Laforcade 2018). Their initiatives are part of a wider policy for reorganisation, regulation and rationalisation of psychiatric health policies and practices at local level in France (see: Benamouzig and Ulrich 2016; Nay, et al., 2016). Reference to the economic and social cost of schizophrenia is recurrent, as is the notion of "cognitive health" as a contemporary public health challenge, throughout life spans, and not restricted to the elderly (see: Medalia and Erlich 2017).

To sum up Caroline and N. Franck's position, CRT could render the notions of rehabilitation and empowerment operational by way of its potentiating role for psychosocial and work rehabilitation programmes (its "springboard" function according to Caroline). Behind this discourse is the idea that CRT should not be restricted to "a few teams engaged in research" (to quote a psychiatrist), but, given its potential medical and socio-economic benefits, that it should be integrated into everyday psychiatric practice. This would however, according to them, require a reappraisal of the coordination of the many health structures and the range of healthcare and social protagonists. The aim would be to "reinforce the resources of the individual" (in the words of a psychiatrist), that is to say to elaborate "personalised trajectories" suited to individuals' abilities, and their personal organisational, social, cognitive, emotional, economic, etc. resources (see: Cella, Reeder, and Wykes 2015).

b. Centrifugal versus centripetal

Caroline and N. Franck do not restrict themselves to expressing stances, they also propose implementation models for CRT as a tool operationalising psychosocial rehabilitation. It is interesting to note that they have developed two implementation models that differ slightly, one being centripetal and the other centrifugal:

Caroline has co-authored two articles with the Chief Medical Officer in a North American state setting out and proposing to disseminate the "French model" and the "philosophy" of her CRT unit organisation. As illustrated before, her centripetal model is based on the strengths of the French sector organisation: her medical team conducts the clinical and cognitive evaluations and then coordinates and organises the relationships across the medical and social facilities in the sector to deploy the individual's project. In this model, the CRT programmes are to circulate and care provision can be delegated (thus each year the unit trains a considerable number of nurses, neuropsychologists, or occupational therapists for this purpose). Above all, the team is to ensure coordination with the social structures piloting or supporting social rehabilitation, in particular professional rehabilitation, for people with a disability. Sometimes, as I observed, the team hastened administrative procedures, which can often be lengthy. Caroline also argued that the case files are in a more favourable position if

⁹ My translation from French.

the person is involved in a CRT programme "because they know it is oriented towards social integration".

The organisation set up by Franck is along the same lines (personalised trajectories according to the person's resources, mobilisation of the resources in the sector, dissemination of methods, training for practitioners). Franck nevertheless proposes a model that I choose to call centrifugal, since it allocates more competences to a central structure (these being delegated to the sector in the centripetal model), and in which he extends the capacities for organisation and coordination to third-party structures. His model, the principles of which have been set out in several scientific publications or in institutional documentation, redefines the health care services over a specific but large territory (the French regions Auvergne-Rhône-Alpes and Nouvelle Aquitaine, around 14 million inhabitants) on the basis of a network of hospital facilities labelled as "psychosocial rehabilitation and cognitive remediation" structures (Franck 2018; Morin et Franck 2017; Franck and Laforcade 2018).¹⁰ This network comprises several "referral centres" and first-line health care providers, where the activities are coordinated by a resource centre that he created and now heads in Lyon. This organisation is expected to develop clinical research and teaching activities, but above all to provide a continuity between a variety of specialized care and to integrate different categories of social workers in charge of social and professional rehabilitation programmes (specialised technical instructors, social and family economy advisors, etc.) who extend the competences of the medical team (psychologists, psychiatrists, nurses and neuropsychologists) thus bolstering its field of action. While CRT remains a central element, it is combined in this model with other rehabilitation techniques (psychoeducation, training in social cognition, job coaching, etc.). The aim is for instance to make CRT a key tool in the work rehabilitation programmes for people suffering from schizophrenia, in collaboration with specialised units, also importing North-American or British alternative organisational strategies (such as job-coaching).

Three elements that are common to these two models have to be highlighted:

The first is the persistence of a hospital-centred approach, in contradiction with the rehabilitation philosophy motivating the actors: the situations are still partly defined by the hospital medical teams who then coordinate the actions to be deployed and to delegate outside. It can however be noted here that the care network organisation is not a response to the hyper-specialisation of medicine, but rather to a dual-uncertainty mode of management affecting both the definition and the complexity of clinical situations and the nature of the interventions and their efficacy (Fox, 1959, 2000).

The second element concerns the ambition to reorganize the psychiatric health care services at a territorial level. This ambition is articulated with a policy of coordinating the health, medico-social, and social facilities around rehabilitation and recovery ideals. While this organisational challenge is central to the deployment of CRT in France for its proponents, it also accompanies a national legislative and normative dynamic (such as the *Plan psychiatrie et santé mentale 2011-2015* [*The Psychiatry and Mental Health Plan 2011-2015*], and the *Loi de modernisation du système de santé du 26 janvier 2016* [*the Law for Health System Modernization of January 26th 2016*]). Nevertheless, it should be noticed that this implies reconciling individuals and institutions that do not have a homogenous, uniform conception (or "philosophy" as Caroline would say) of what a psychiatric disorder actually is, of its causes, the ways to provide care to a patient, the most efficacious practices, and so forth. Thus one psychiatrist told me that the aim to "instate rehabilitation and remediation" in health and medico-social structures:

¹⁰ See also : <https://centre-ressource-rehabilitation.org/>

“should not go against the basic conceptions and ideologies, because in all events patients can be seen in several different ways and it is not because the predominant French model is analytic that remediation cannot be developed. It is completely different, we are not on the same level. By formulating the message in that way, we also facilitate things. We did not replay the war between cognitive behavioural therapies and psychoanalysis”.¹¹

For her part, Caroline also stresses the aim to “reconcile” neurosciences and fundamental and clinical research (cognitive sciences, neurodevelopment, neuropsychology) with the various medical, medico-social and social psychiatric worlds.

The resort to the term of rehabilitation to refers to CRT practices and its organisational ambition should thus also be reviewed in this perspective. The articulation between CRT and rehabilitation is not recent but, as already pointed out, it is the overlap between “rehabilitation” and “remediation” that is prominent in the case of France (the psychiatrist quoted above systematically alternated between the two terms in the interview, and this is also the case for the names given to CRT structures in France). This overlap is concomitant with shifts in the objectives of care provision, and enables protagonists to emphasise the pragmatic and consensual dimension of CRT, and also its collective and organisational dimension: cognitive optimisation is only one of the means – along with the mutualisation and coordination of structures – to enable rehabilitation. This is the case even given that the CRT care model is pervaded by theories on schizophrenia and that it contains a project to reshape mental health policies – none of which are neutral as to their objectives.

Finally, the third element is that the question of psychosocial rehabilitation as being the horizon of CRT tends, provisionally at least, to relieve practitioners of the embarrassing question of the nature of its effects, and to reposition the question of its efficacy. Indeed, as mentioned earlier, how can the specific effect of CRT (on cognition or rehabilitation) be determined if it is included within a plurality of care provisions and dispositives of assistance? This issue takes second place in favour of CRT “organisational innovation” potential in psychiatry (Abbott, 1988): i.e. CRT ability to combine interests of different actors, and initiate modes of organization and collaborations around its applications backed up by a discourse on medico-economic issues and health policies.

Conclusion

In this article I have described the CRT assemblage and suggested that efforts to optimize cognitive abilities among people diagnosed with schizophrenia lie at the intersection of multiple, overlapping conceptions and theories of mental disorders and psychiatric care, which pose a challenge to attempts to define the practice. Its proponents justify the use of CRT through recourse to a wide array of arguments, but their arguments rely most heavily on two key notions or concepts that are currently deeply transforming the field of psychiatry: recovery (or psychosocial rehabilitation) and the neurodevelopmental hypothesis of schizophrenia. I have, furthermore, argued that the psychiatrists’ focus on cognitive health and cognitive abilities (or deficits) is not only redefining the logics of care and reshaping medical conceptions of schizophrenia, it is also opening up a new understanding of the

¹¹ The “war” refers explicitly to the national controversy that started in France in 2004 in the mental health field in reaction to two institutional evaluation reports on the behavioral disorders in children and adolescents and the efficacy of psychotherapies. To sum up too briefly, it has opposed proponents of psychodynamics and psychoanalysis against the cognitivists and biological psychiatrists (see Champion 2008). It should be noted that in France, CRT is identified as a form of cognitive and behavioral therapy, inherited from cognitive neuroscience and biological psychiatry.

precarity of people’s lives, where emotional, biological and cognitive fragility and vulnerability are intertwined with social and economic uncertainty. Finally, through a consideration of the necessity of combining cognitive optimization with the coordination and mutualisation of psychiatric medical, medico-social and social resources and facilities, I have demonstrated how CRT became a means for a group of French psychiatrists to enact reforms of the French psychiatric care system.

Together, these desired reforms and CRT development in France raise questions about the articulation between an individual’s capacities and collective resources, i.e. what needs to be collectively undertaken (at organizational, medical, political or economic scales for example) to support people with chronic psychiatric disorders. CRT, its neuroscientific theoretical foundations, and this combination – or rather overlap – with a care philosophy centred on psychosocial rehabilitation, supports a threefold shift in the psychiatric therapeutic project. The first is a clinical shift concerning the target of care: from the most prototypical and severe symptoms of the disorder (delusion, hallucinations, etc.) to patients’ cognitive abilities and social inclusion as the centre of therapeutic attention. Second, we have seen a shift in the temporality of therapeutic interventions: from the psychotic crisis requiring hospitalisation to the daily lives of the people and the chronic dimensions of their illness. Finally, these two shifts are intensifying a third one – a shift that already long occurred in psychiatry – regarding the spatial dimension of care: a de-centralizing of care provision to facilities outside the hospital. The objective of therapeutic interventions centred on cognitive symptom management turns attention to concerns about the ability of a patient with fewer cognitive capacities (or capacities that are altered or different) to adapt to the constraints of everyday life in the community. These major changes in theories of care and care provision, drifting towards socialisation, reflect significant reconfigurations of the notions of cure and chronicity in psychiatry in recent decades through the rise of the recovery movement and autonomy as the objective of psychiatric interventions. Moreover, these changes also reflect a move from schizophrenia as an experience of extreme alterity to the focus on the ordinary of everyday life of people living with mental illness.

References

- Abbott, Andrew 1988 *The System of Professions: an Essay on the Division of Expert Labor*. Chicago: University of Chicago Press.
- Andreasen, Nancy, Peg Nopoulos, Daniel S. O’Leary, Del Miller, Thomas Wassink, and Michael Flaum 1999 Defining the phenotype of schizophrenia: Cognitive dysmetria and its neural mechanisms. *Biological Psychiatry* 46(7):908–920.
- Bachmann, Silke, and Johannes Schröder 2017 Neurological Soft Signs in Schizophrenia: An Update on the State- versus Trait-Perspective. *Frontiers in Psychiatry* 8(272):doi: 10.3389/fpsy.2017.00272
- Bell, Morris D., Gary J. Bryson, Tamasine C. Greig, Joanna M. Fiszdon, and Bruce E. Wexler 2005 Neurocognitive enhancement therapy with work therapy: productivity outcomes at 6- and 12-month follow-ups. *Journal of Rehabilitation Research & Development* 42:829–838.
- Bell, Morris D., Wayne Zito, Tamasine Greig, and Bruce E. Wexler 2008 Neurocognitive enhancement therapy with vocational services: work outcomes at two-year follow-up. *Schizophrenia Research* 105(1-3):18–29.
- Benamouzig, Daniel, and Valérie Ulrich 2016 L’organisation des soins en psychiatrie. *Avant-propos. Revue française des affaires sociales* 2(6):7–19.
- Bergeron, Henri, Patrick Castel, and Étienne Nouguez. 2011 A public policy designed and run by a private entrepreneur. Tensions between public health and private interest in the battle against obesity in France. *Revue française de science politique* 61(2):201–229.

- Bilder, Robert M. 2018 How to Resolve Controversies in Cognitive Training: Let the Data Speak! *Biological Psychiatry* 3:903–904
- Boake, Corwin 1989 A history of cognitive rehabilitation of head-injured patients, 1915 to 1980. *The Journal of Head Trauma Rehabilitation* 4(3):1–8.
- Boake, Corwin, and Leonard Diller 2005 History of rehabilitation for traumatic brain injury. *In Rehabilitation for Traumatic Brain Injury*. Walter M. High Jr, Angelle M. Sander, Margaret A. Struchen, and Karen A. Hart, eds., pp. 3–13. Oxford: Oxford University Press.
- Bon, Laura, and Nicolas Franck 2018 The impact of cognitive remediation on cerebral activity in schizophrenia: a systematic review. *Brain and Behavior* 8(3):e00908.
- Bowie, Christopher R., Susan R. McGurk, Brent Mausbach, Thomas L. Patterson, and Philip D. Harvey 2012 Combined cognitive remediation and functional skills training for schizophrenia: effects on cognition, functional competence, and real-world behavior. *American Journal of Psychiatry* 169(7):710–718.
- Braslow, Joel Tupper 2013 The Manufacture of Recovery. *Annual Review of Clinical Psychology* 9(1):781–809.
- Brennikmeijer, Joanna 2010 Taking care of one's brain: How manipulating the brain changes people's selves. *History of the Human Sciences* 23:107–126.
- Brodwin, Paul, and Livia Velpry, eds. 2014 *The Practice of Constraint in Psychiatry: Emergent Forms of Care and Control*. *Culture, Medicine, and Psychiatry* 38(4).
- Broer, Tineke, and Martyn Pickersgill 2015 Targeting brains, producing responsibilities: the use of neuroscience within British social policy. *Social Science & Medicine* 132(5):54–61.
- Bryce, Shayden, Stuart James Lee, Jennie Ponsford, and Susan L. Rossell 2016 Desire for greater clarity when defining 'cognitive remediation' in reviews of treatment efficacy for schizophrenia. *Australian & New Zealand Journal of Psychiatry* 50(5):497–497.
- Cella, Matteo, Clare Reeder, and Til Wykes 2015 Cognitive remediation in schizophrenia — now it is really getting personal. *Current Opinion in Behavioral Sciences* 4:147–151.
- Centre de Preuves en Psychiatrie et en Santé Mentale 2015 *Données de preuves en vue d'améliorer le parcours de soins et de vie des personnes présentant un handicap psychique sous tendu par un trouble schizophrénique [Evidence for improving the care and life course of people with a psychic disability due to a schizophrenic disorder]*. Versailles: Centre de Preuves en Psychiatrie et en Santé Mentale.
- Chamak, Brigitte, and Baptiste Moutaud, eds. 2014 *Neurosciences et société. Enjeux sociaux des savoirs et pratiques sur le cerveau*. Paris: Armand Colin.
- Champion, Françoise 2008. Pourquoi tant de déchirements ? *In Psychothérapie et Société*. F. Champion, eds., pp. 9-34. Paris: Armand Colin.
- Chaytor, Naomi, and Maureen Schmitter-Edgecombe 2004 The Ecological Validity of Neuropsychological Tests: A Review of the Literature on Everyday Cognitive Skills. *Neuropsychology Review* 13(4):181–197.
- Choudhury, Suparna, and Sheehan Moore 2016 Locating Risk in the Adolescent Brain: Ethical Challenges in the Use of Biomarkers for Adolescent Health and Social Policy. *American Medical Association Journal of Ethics* 18(12):1199–1206.
- Choudhury, Suparna, and Jan Slaby, eds. 2012 *Critical Neuroscience: A Handbook of the Social and Cultural Contexts of Neuroscience*. Chichester: Wiley-Blackwell.
- Corin, Ellen E. 1990 Facts and Meaning in Psychiatry. An Anthropological Approach to the Lifeworld of Schizophrenics. *Culture, Medicine, and Psychiatry* 14(2):153–188.
- Collier, Stephen J. 2006 Global Assemblages. *Theory, Culture & Society* 23(2-3):399–401.
- Darmon, Muriel 2020 The School Form of the Hospital: How Does Social Class Affect Post-Stroke Patients in Rehabilitation Units? *Qualitative Sociology* 43:235–254.

- Deleuze, Gilles, and Félix Guattari 1980 *Mille Plateaux*. Paris: Les Éditions Minuit.
- Demily, Caroline, and Nicolas Franck 2008 Cognitive remediation: A promising tool for the treatment of schizophrenia. *Expert Review of Neurotherapeutics* 8:1029–1036.
- Dodier, Nicolas, and Anthony Stavrianakis, eds. 2018 *Les objets composés. Agencements, dispositifs, assemblages*. Paris: EHESS.
- Drake, Richard James, Christine Day, R. Picucci, J. Warburton, Warren Larkin, N. Husain, Clare Reeder, Til Wykes, and M. Marshall 2014 A naturalistic, randomized, controlled trial combining cognitive remediation with cognitive-behavioural therapy after first-episode non-affective psychosis. *Psychological Medicine* 44(9):1889–1899.
- Dumit, Joseph 2004 *Picturing Personhood: Brain Scans and Biomedical Identity*. Princeton: Princeton University Press.
- Ehrenberg, Alain 2014 Suis-je malade de mon cerveau ou de mes idées ? Deux récits neuropsychanalytiques. *In Neurosciences et société. Enjeux sociaux des savoirs et pratiques sur le cerveau*. Brigitte Chamak, and Baptiste Moutaud, eds., pp 255–287. Paris, France: Armand Colin.
- Ehrenberg, Alain 2020 *The Mechanics of Passions. Brain, Behaviour, and Society*. Montreal: McGill-Queen's University Press
- Ehrenberg, Alain, and Anne M. Lovell, eds. 2001 *La maladie mentale en mutation. Psychiatrie et société*. Paris: Odile Jacob.
- Fiszdon, Joanna, and Felice Reddy 2012 Review of social cognitive treatment for psychosis. *Clinical Psychology Review* 32(8):724–740.
- Fox, Renee C. 1959 *Experiment Perilous: Physicians and Patients Facing the Unknown*. Glencoe: Free Press.
- Fox, Renee C. 2000 Medical Uncertainty Revisited. *In Handbook of Social Studies in Health and Medicine*. G.L. Albrecht, R. Fitzpatrick, and S. Scrimshaw, eds., pp. 409–425. London: Sage Publications.
- Franck, Nicolas 2018 Introduction. Où en est la réhabilitation psychosociale en France ? *In Traité de réhabilitation psychosociale*. N. Franck, eds., pp. 1–6. Paris: Elsevier-Masson.
- Franck, Nicolas, and Michel Laforcade 2018 Responding to the needs of the population suffering from severe mental disorders by a multifaceted territorial approach: Reorganization of the French mental health system. *Perspectives in Psychiatric Care* 54(4):527–529.
- Frith, Christopher D. 1992 *The cognitive neuropsychology of schizophrenia*. Hillsdale: Erlbaum.
- Gold, James M. 2004 Cognitive deficits as treatment targets in schizophrenia. *Schizophrenia Research* 72:21–28.
- Goldberg, Terry E., Anthony David, and James M. Gold 1993 Neurocognitive deficits in schizophrenia. *In Schizophrenia*. Steven R. Hirsch, and Daniel R. Weinberger, eds., pp.168–184. Cambridge MA: Blackwell Publishing.
- Green, Michael F. 1996. What are the functional consequences of neurocognitive deficits in schizophrenia? *American Journal of Psychiatry* 153:321–330.
- Green, Michael F., Robert Kern, David L. Braff, and Jim Mintz 2000 Neurocognitive deficits and functional outcome in schizophrenia: Are we measuring the "right stuff?" *Schizophrenia Bulletin* 26:119–136.
- Haut Conseil de la Santé Publique 2016 *Évaluation du plan Psychiatrie et santé mentale 2011-2015 [Evaluation of the Psychiatry and Mental Health Plan]*, avril.
- Harvey, Philip D., Susan R. McGurk, Henry Mahncke, and Til Wykes 2018 Controversies in computerized cognitive training. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging* 3(11):907–915.

- Henckes, Nicolas 2007 *Le nouveau monde de la psychiatrie française. Les psychiatres, l'État et la réforme des hôpitaux psychiatriques de l'après-guerre aux années 1970*. Thèse de sociologie. Paris: École des hautes études en sciences sociales.
- Henckes, Nicolas 2009 Narratives of Change and Reform Processes: Global and Local Transactions in French Psychiatric Hospital Reform After the Second World War. *Social Science & Medicine* 68:511–518.
- Henckes, Nicolas 2011 Reforming psychiatric institutions in the mid-twentieth century: a framework for analysis. *History of Psychiatry* 22(2):164–181.
- Henckes, Nicolas 2019 Schizophrenia Infrastructures: Local and Global Dynamics of Transformation in Psychiatric Diagnosis-Making in the Twentieth and Twenty-First Centuries. *Culture, Medicine, and Psychiatry* 43(4):548–573.
- Heinrichs, Walter 2005 The primacy of cognition in schizophrenia. *American Psychologist* 60(3):229–242.
- Heinrichs, Walter, and Konstantine Zakzanis 1998 Neurocognitive deficit in schizophrenia: a quantitative review of the evidence. *Neuropsychology* 12(3):426–445.
- Hogarty, Gerard E., and Samuel Flesher 1999 Developmental theory for a cognitive enhancement therapy of schizophrenia. *Schizophrenia Bulletin* 25(4):677–692.
- Jacobson, Nora 2004 *In Recovery. The Making of Mental Health Policy*. Nashville: Vanderbilt University Press.
- Jenkins, Janis H. 2015 *Extraordinary conditions. Culture and experience in mental illness*. Berkeley: University of California Press.
- Keefe, Richard S.E., and Luca Pani 2018 Take This Cognitive Training Efficacy Bar Fight Outside (to a Regulatory Agency). *Biological Psychiatry* 3:900–902.
- Keshavan, Matcheri S., Sophia Vinogradov, Judith Rumsey, Joel Sherrill, and Ann Wagner 2014 Cognitive training in mental disorders: update and future directions. *American Journal of Psychiatry* 171(5):510–522.
- Kurtz, Matthew M. 2012 Cognitive remediation for schizophrenia: current status, biological correlates and predictors of response. *Expert Review of Neurotherapeutics* 12(7):813–821.
- Kurtz, Matthew M., and Christi L. Richardson 2012 Social cognitive training for schizophrenia: a meta-analytic investigation of controlled research. *Schizophrenia Bulletin* 38(5):1092–1104.
- Laforcade, Michel 2016 Rapport relatif à la santé mentale [Mental Health Report]. Ministère de la Santé. http://social-sante.gouv.fr/IMG/pdf/dgos_rapport_laforcade_mission_sante_mentale_011016.pdf
- Leguay, Denis 2017 Organisation de l'offre de soin. In *Manuel de Psychiatrie*. Jean-Daniel Guelfi, and Frédéric Rouillon, eds., pp. 751–754. Paris, Elsevier-Masson.
- Lim, Chap Sam, Keow Ngang Tang, and Liew Kee Kor 2012 Drill and Practice in Learning (and Beyond). In *Encyclopedia of the Sciences of Learning*. Norbert M. Seel, eds., pp.1040–1042. Boston: Springer.
- Marcus, George E., and Erkan Saka 2006 Assemblage. *Theory, Culture & Society* 23(2-3):101–106.
- Marquis, Nicolas 2019 Making people autonomous: a sociological analysis of the uses of contracts and projects in the psychiatric care institutions. *Culture, Medicine, and Psychiatry*: doi:10.1007/s11013-019-09624-x
- McGurk, Susan R., Kim Mueser, Karin Feldman, Rosemarie Wolfe, and Alysia Pascaris 2007 Cognitive training for supported employment: 2-3 year outcomes of a randomized controlled trial. *American Journal of Psychiatry* 164(3):437–441.

- McGurk, Susan R., Elizabeth Twamley, David I. Sitzer, Gregory McHugo, and Kim Mueser 2007 A meta-analysis of cognitive remediation in schizophrenia. *American Journal of Psychiatry* 164(12):1791–1802.
- McGurk, Susan R., and Til Wykes 2008 Cognitive remediation and vocational rehabilitation in schizophrenia. *Psychiatric Rehabilitation Journal* 31:350–359.
- MGurk, Susan R., Kim Mueser, Thomas J. DeRosa, Rosemarie Wolfe 2009 Work, Recovery, and Comorbidity in Schizophrenia: A Randomized Controlled Trial of Cognitive Remediation. *Schizophrenia Bulletin* 35(2):319–35.
- Medalia, Alice, and Matthew Erlich 2017 Why cognitive health matters. *AJPH Perspectives* 107(1):45–47.
- Medalia, Alice, Matthew Erlich, Charlotte Soumet-Leman, and Alice M. Saperstein 2019 Translating cognitive behavioral interventions from bench to bedside: The feasibility and acceptability of cognitive remediation in research as compared to clinical settings. *Schizophrenia Research* 203:49–54
- Medalia, Alice, and Alice M. Saperstein 2013 Does cognitive remediation for schizophrenia improve functional outcomes? *Current Opinion in Psychiatry* 26(2):151–157.
- Morin, Laurent, and Nicolas Franck 2017 Rehabilitation interventions to promote recovery in schizophrenia: A systematic review. *Frontiers in Psychiatry* 8(100):10.3389/fpsy.2017.00100.
- Moutaud, Baptiste 2011 Are we Receptive to Naturalistic Explanatory Models of our Disease Experience? The applications of Deep Brain Stimulation to Obsessive-Compulsive Disorders and Parkinson's disease. In *Sociological Reflections on the Neurosciences*. M. Pickersgill and I. Keulen, eds., pp. 179–202. Bingley: Emerald.
- Moutaud, Baptiste 2015 DSM-5 and the Reconceptualization of Obsessive-Compulsive Disorder. An Anthropological Perspective from the Neuroscience Laboratory. In *The DSM-5 in Perspective: Philosophical Reflections on the Psychiatric Babel*. S. Demazeux and P. Singy, eds., pp. 225–238. Dordrecht: Springer.
- Moutaud, Baptiste 2016 Neuromodulation Technologies and the Regulation of Forms of Life. Exploring, Treating, Enhancing. *Medical Anthropology* 35(1):90–103.
- Moutaud, Baptiste 2018 Neurosciences et psychiatrie, quelles lignes de recherche pour les sciences sociales? In *Santé mentale et souffrance psychique : un objet pour les sciences sociales*. I. Coutant, and S. Wang, eds., pp. 209–226. Paris: CNRS Editions.
- Moutaud, Baptiste 2012 Une "convergence forcée"? Ethnographie d'une collaboration entre neurologie et psychiatrie dans un centre de neurosciences en France. *Anthropologie & Santé* 4. <https://doi.org/10.4000/anthropologiesante.927>
- Nay, Olivier, Sophie Béjean, Daniel Benamouzig, Henri Bergeron, Patrick Castel, and Bruno Ventelou 2016 Achieving universal health coverage in France: policy reforms and the challenge of inequalities. *Lancet* 387(10034):doi.org/10.1016/S0140-6736(16)00580-8
- O'Carroll, Ronan 2000 Cognitive impairment in schizophrenia. *Advances in Psychiatry Treatment* 6(3):161–168.
- Ong, Aihwa, and Stephen Collier, eds. 2005 *Global Assemblages: Technology, Politics, and Ethics as Anthropological Problems*. Malden and Oxford: Wiley-Blackwell.
- Ong, Aihwa, 2005 Ecologies of Expertise: Assembling Flows, Managing Citizenship. In *Global Assemblages: Technology, Politics, and Ethics as Anthropological Problems*. A. Ong, and S. Collier, eds., pp. 337-353. Malden and Oxford: Wiley-Blackwell.
- Owen Michael J., Michael C. O'Donovan, Anita Thapar, and Nicholas Craddock 2011 Neurodevelopmental hypothesis of schizophrenia. *The British Journal of Psychiatry* 198(3): 173–175.
- Parente, Rick 2014 Editorial. *NeuroRehabilitation* 34:1–2.

- Parente, Rick, and Mary Stapleton 1997 History and systems of cognitive rehabilitation. *NeuroRehabilitation* 8:3–11.
- Penades, Rafael, Nuria Pujol, Rosa Catalan, Guillem Massana, Giuseppina Rametti, Clemente Garcia, Nuria Bargalló, Cristobal Gastó, Miguel Bernardo, and Carme Junqué 2013 Brain effects of cognitive remediation therapy in schizophrenia: a structural and functional neuroimaging study. *Biological Psychiatry* 73(10):1015–1023.
- Peyroux, Elodie, and Nicolas Franck 2014 RC2S: a cognitive remediation program to improve social cognition in schizophrenia and related disorders. *Frontiers in Human Neuroscience* 8:400. doi:10.3389/fnhum.2014.00400.
- Pickersgill, Martyn, Sarah Cunningham-Burley, and Paul Martin 2011 Constituting neurologic subjects: Neuroscience, subjectivity and the mundane significance of the brain. *Subjectivity* 4:346–365.
- Pickersgill, Martyn 2012 What Is Psychiatry? Co-producing Complexity in Mental Health. *Social Theory & Health* 10(4): 328–347.
- Pickersgill, Martyn 2014 Debating DSM-5: diagnosis and the sociology of critique. *Journal of Medical Ethics* 40:521–525.
- Pickersgill, Martyn, and Ira van Keulen, eds. *Sociological Reflections on the Neurosciences*, Bingley, Emerald, 2011.
- Pilgrim, David 2009 Recovery from Mental Health Problems: Scratching The Surface Without Ethnography. *Journal of Social Work Practice* 23(4):475–487.
- Pols, Jeannette 2006 Washing the citizen: washing, cleanliness and citizenship in mental health care. *Culture, Medicine, and Psychiatry* 30:77–104.
- Rabinow, Paul 2003 *Anthropos Today. Reflections on Modern Equipment*. Princeton: Princeton University Press.
- Rose, Nikolas 2015 Neuroscience and the future for mental health? *Epidemiology and Psychiatric Sciences* 25(2):1–6.
- Rose, Nikolas, and Joelle Abi-Rached 2013 *Neuro: The New Brain Sciences and the Management of the Mind*. Princeton: Princeton University Press.
- Rose, Nikolas, and Joelle Abi-Rached 2014 Governing through the brain: neuropolitics, neuroscience and subjectivity. *Cambridge Anthropology* 32(1):3–23.
- Rüppel, Jonas, and Torsten H. Voigt 2019 The Death of the Clinic? Emerging Biotechnologies and the Reconfiguration of Mental Health. *Science, Technology & Human Values* 44(4):567–580.
- Sass, Louis A. 2003 "Negative symptoms", schizophrenia, and the self. *International Journal of Psychology and Psychological Therapy* 3:153–180.
- Sass, Louis A. 2004 "Negative Symptoms," Commonsense, and Cultural Disembedding in the Modern Age. In *Schizophrenia, Culture, and Subjectivity: The Edge of Experience*. J. H. Jenkins, and R. J. Barrett, eds., pp.209–226. Cambridge: Cambridge University Press.
- Spaulding, William D., Dorie Reed, Mary Sullivan, Charles Richardson, and Martin Weiler 1999 Effects of Cognitive Treatment in Psychiatric Rehabilitation. *Schizophrenia Bulletin* 25(4):657–676.
- Venturi, Camilo 2014 Remédiation cognitive et schizophrénie de laboratoire. In *Neurosciences et société. Enjeux sociaux des savoirs et pratiques sur le cerveau*. B. Chamak, and B. Moutaud, eds., pp. 157–185. Paris: Armand Colin.
- Wexler, Bruce E., and Morris D. Bell 2005 Cognitive remediation and vocational rehabilitation for schizophrenia. *Schizophrenia Bulletin* 31(4):931–941.
- Woods, Angela 2011 *The sublime object of psychiatry - schizophrenia in clinical and cultural theory*. Oxford and New York: Oxford University Press.

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- Woods, Angela, Akiko Hart, and Helen Spandler 2019 *The Recovery Narrative: Politics and Possibilities of a Genre*. *Culture, Medicine, and Psychiatry*: 10.1007/s11013-019-09623-y.
- Wykes, Til, and Mark Van der Gaag 2001 Is it time to develop a new cognitive therapy for psychosis – cognitive remediation therapy (CRT)? *Clinical Psychology Review* 21(8): 1227–1256.
- Wykes, Til, Michael Brammer, John Mellers, Peter Bray, Clare Reeder, Clare Williams, and Julia Corner 2002 Effects on the brain of a psychological treatment: cognitive remediation therapy: functional magnetic resonance imaging in schizophrenia. *The British Journal of Psychiatry* 181(02):144–152.
- Wykes, Til, and Clare Reeder 2005 *Cognitive Remediation Therapy for Schizophrenia Theory and Practice*. London and New York: Routledge.
- Wykes, Til, Vyv Huddy, Caroline Cellard, Susan McGurk, and Pál Czobor 2011 A meta-analysis of cognitive remediation for schizophrenia: methodology and effect sizes. *American Journal of Psychiatry* 168(5):472–485.
- Wykes, Til, and Will D. Spaulding, 2011 Thinking About the Future Cognitive Remediation Therapy—What Works and Could We Do Better? *Schizophrenia Bulletin* 37:S80–S90.