‘Promising’ therapies: neuroscience, clinical practice, and the treatment of psychopathy

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Abstract

Neuroscientific research into mental health commands generous funding, suggesting neuroscience is understood by a variety of actors and institutions as having significant potential to enhance the therapeutic practices of psychiatrists. This article interrogates this ‘therapeutic promise’ of neuroscience through the case study of the psychiatric condition personality disorder. Specifically, the focus is on the promissory discourse of clinicians specialising in the management of two variants of personality disorder – antisocial personality disorder and psychopathy – and researchers investigating the neurobiology of these constructs. The article discusses the respondents’ ambivalent expectations regarding the therapeutic promise of brain research, and shows how these are structured by understandings of the ontology of personality disorder. In turn, these ambivalences direct our attention to practical issues surrounding the potential of neuroscience to translate into and enhance clinical practice, as well as theoretical concerns revolving around the place and role of the biological within contemporary neuroscience, psychiatry and psychology. In sum, the necessity of large material and symbolic investments in neuroscience should, perhaps, be reflected upon more critically, and analytic encounters with this discipline must keep in mind it’s at times surprising commitment to the realms of the social and the psychological.

Keywords: clinical psychology, neuroscience, personality disorder, psychiatry, psychopathy

Introduction

In recent years, neuroscience has come to be viewed as having considerable potential to enhance a variety of clinical practices. The discipline in general, but particularly as applied to psychiatry, has been imbued with what Rubin (2008) might call ‘therapeutic promise’, and considerable optimism – and some pessimism (Pickersgill 2009a: 46) – abounds regarding its future effects on the mental health professions. Less obvious, however, is whether these high hopes are warranted. As Cullen and Cohn have pointed out, the relationship between neuroscience and clinical practice is currently ‘unclear’ (Cullen and Cohn 2006: 117). This is not necessarily surprising, since the movement of knowledge from bench to bedside is far from straightforward (Wainwright et al. 2006, Hedgecoe 2008, Martin et al. 2008).
This article interrogates the therapeutic promise of neuroscience through an analysis of interviews with a variety of neuroscientists, as well as psychiatrists and psychologists at the clinical 'coalface'. The analysis is orientated around neuroscientific work into psychiatric conditions known as personality disorders; through it, the paper aims to cast light on the expectations these professionals have about the potential of neuroscience to enhance clinical work in the future. In particular I demonstrate the degree to which these expectations are structured by particular visions of the ontology of personality disorder and show how the particularities of these conditions configure the embedding of the therapeutic promise within scientific and clinical talk in surprising ways. In so doing, the article seeks to highlight practical issues surrounding the potential of neuroscience to translate into clinical practice, as well as theoretical concerns revolving around the place and role of the biological within contemporary neuroscience, psychiatry and psychology.

The promise of neuroscience and the problem of personality disorder

With considerable traction in scientific, medical and popular cultures (Dumit 2004, Joyce 2008), what is termed 'neuroscience' – not so much a discipline as an umbrella term for a range of traditions encompassing studies of the chemistry, development, structure and function of the nervous system – today parallels genetics in the 1990s in terms of its scope, anticipated range of applications and epistemic authority. Nowhere is the contemporary enchantment with the neurosciences more apparent than in psychiatry, where a 'techno-somatic' imperative is dominant that privileges both the body as a locus for psychopathology and technology as a means of visualising it (Pickersgill 2009a: 45, 2010). A key component of this authority is the clinical benefit that neuroscience is viewed as inevitably offering up to clinicians; perhaps more than any other tradition within contemporary mental health research, neuroscience is argued by a variety of stakeholders to have considerable potential to render into sharp relief the causes and substrates of conditions such as depression and schizophrenia, and to powerfully illuminate possible treatment pathways and modalities (Rose 2007).

Of the various sociotechnical engines generating these expectations, celebratory discourses centring on neuroscientific advancements are especially noteworthy. In particular, visions of potentiality are at once animated, supported and extended by the considerable investments made in neuroscientific research into a variety of psychopathologies, and by occasional bold claims regarding the therapeutic benefits that may emerge from neuroscience (Pickersgill 2010). In the UK, the Medical Research Council (MRC) proudly describe the neuroscientific research they are funding into mental illness in their recent booklet The Brain (aimed at 'the general public'), and note that many MRC scientists are exploring 'what happens in the brain' when illnesses like schizophrenia and depression occur, as well as 'what can be done to combat them' (MRC 2009: 24). The Council’s commitment to neurologic research into mental heath is likewise evidenced by their continuous financial support (sometimes with the Wellcome Trust), of a number of well-funded research groups and centres.

Though not always overt, we can see that there is considerable ‘therapeutic promise’ (Rubin 2008), ascribed to neuroscience; an apparatus that helps to organise and legitimise the research endeavour. Actors and institutions articulating this promise form part of what Moreira and Palladino (2005) might call a ‘regime of hope’, since expectations may become embedded within novel social networks and material practices such as the new funding streams and research centres described above (cf. Hedgecoe and Martin 2003), as well as, perhaps, new forms of subjectivity (Rose 2007). Yet, this promissory logic is interlocked with
a ‘regime of truth’ wherein salience is ascribed to and sociality generated by the ‘realities’ of scientific innovation: experiments fail to be reproduced, strides in knowledge production falter, and new treatments do not work (Moreira and Palladino 2005: 67). However, such regimes can only exist as a consequence of the assumption of ‘relevance’ of new knowledge to clinical practice: scientific progress and promises depend on clinicians understanding these actual or potential findings and developments as salient to their current or future practice. Without this, the regimes that Moreira and Palladino analyse are rendered ineffective as engines of sociotechnical change.

Antisocial personality disorders

The psychiatric conditions known as personality disorders are, in many ways, unlike more familiar psychopathologies such as depression or schizophrenia. Rather than some form of discrete cognitive or emotional dysfunction, personality disorders are understood as a global impairment of personality involving longstanding and ongoing patterns of thought, feeling and action that are ultimately maladaptive (APA 2000). Given this, it is unsurprising that social scientists have been quick to expose the cultural biases structuring these diagnostic categories (Nukolls 1992). Nonetheless, personality disorders remain an ever more visible component of the psychiatric purview.

In the UK, personality disorders have, over the last decade, come to new political, clinical and scientific prominence (Manning 2006). Largely, this has been as a consequence of the relationship of certain variants of these conditions with severe and criminally antisocial and violent behaviour – specifically, the categories antisocial personality disorder (ASPD) and psychopathy. Most problematic are convicted offenders who also meet the criteria for these conditions: that certain individuals’ behaviour can be understood as both criminal and pathological is the cause of considerable consternation among legal and health professionals, their associated institutions, and to a wide variety of policy-makers. How should such individuals be managed? Who should take responsibility for them? How can they be ‘treated’? Together, these questions form the cornerstone of the oft-discussed ‘problem of personality disorder’.

Neuroscientific ideas and expectations are increasingly invoked within personality disorder discourse. Neurobiological research into these conditions has long been argued to have the potential to provide important insights into their management: scientific understanding ‘yields powerful new interventions for modifying the more severe behavioural and affective manifestations of personality disorders’ (Fogel 1995: ix). Today there are a number of neuroscientists taking personality disorder as their focus, with some concerning themselves almost exclusively with ASPD and psychopathy (Pickersgill 2009a, in press). Their research varies widely, reflecting the diversity within the neuroscience broadly, with work focusing upon questions regarding the ratio of volumes of white to grey matter in the brains of those diagnosed with personality disorders, the activity of the amygdala, and the action of neurotransmitters like serotonin (for reviews see Blair et al. 2005, Kiehl 2006). Investigators conducting neuroscientific studies into personality disorders employ a range of methods, including neurogenetic techniques, neuropsychological tests designed to identify cognitive deficits, and positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) in order to visualise the functioning of cerebral processes.

Neurologic reflections and research on personality disorders and antisociality are apparent within key psychiatric journals (e.g. Spence 2001, Blair 2003, Deeley et al. 2006), and conferences. Exemplifying the rapprochement between neuroscience and psychiatry regarding personality disorder, in 2007 Sheilagh Hodgins and Essi Viding from the prestigious Institute of Psychiatry organised a high-profile Royal Society discussion meeting.
on ‘The Neurobiology of Violence: Implications for Prevention and Treatment’, mapping research into persistent offending and exploring its implications. Reflecting on the symposium, which included papers on issues such as the psychophysiological and molecular genetic correlates of violence, eminent psychiatrist Sir Michael Rutter noted how it ‘indicated what can be achieved in integrating neuroscience with clinical practice’ (Rutter 2008: 2485).

Underpinning the various kinds of investment into neuroscience research into mental health broadly and personality disorder specifically is therefore a commitment to the idea that an understanding of psychopathology at the level of the brain is necessary to develop new treatment interventions. Though evident in funding strategies and professional discourses, it is, however, currently unclear how this therapeutic promise is embedded within the practices and perspectives of clinicians, and, indeed, those of neuroscientists themselves. Several important questions remain unanswered: what are the expectations of those who have most to contribute and to gain from neuroscientific research into personality disorders? What kinds of therapies might emerge? How likely is it that these will translate into practice? Such issues form the focus of the remainder of this article.

Methods

The analysis presented emerges primarily from a four-year study into the history and sociology of personality disorder (1950–2007) (Pickersgill 2009a, 2009b, 2010, in press). Broadly, this empirical qualitative research was concerned with the framing (Rosenberg 1992) of personality disorder, and the ways in which articulations of this construct were co-produced (Jasanoff 2004) through the interacting discourses, practices and technologies of science, law and clinical practice. Several hundred documents (editorials, research and policy papers, letters and institutional ephemera) pertaining to the legal, policy, clinical and scientific aspects of ASPD, psychopathy, and personality disorder in general were analysed; furthermore, interviews and informal conversations were conducted with leading neuroscientists working in this area, and with practising psychiatrists and clinical psychologists. Limited participant observation at scientific and clinical seminars and conferences was also undertaken. In this article, we draw in particular on nine interviews with key neuroscientists working in the field of personality disorder and antisociality, and nine clinicians (clinical psychologists and psychiatrists), specialising in the management of these conditions. The first set of interviews took place over 2006/07; the second over 2008. Their content resonates with that of scientists’ and clinicians’ talk elicited through more informal conversation, as well as with the textual and observational data collected.

The nine neuroscientists interviewed were located within Canada, the US and the UK, and were selected on the basis that they regularly published and/or presented on neuroscience and personality disorder, that this research comprised a significant proportion of their scholarly output, and that they had to have a voice of some influence within UK clinical discourse on personality disorder. The work conducted by the scientists was wide-ranging, from investigations into the (biological) developmental pathways that led to personality disorder, to functional studies of the brains of individuals characterised as psychopathic using fMRI, and neuropsychological examinations of the neural substrates underlying personality disorder. The scientists’ diverse researches reflected the variety of neuroscientific approaches to personality disorder. In the interviews the author sought to gauge the scientists’ views on personality disorder research, what caused these conditions, and how they
might be treated. The methodological aspects of these interviews have been discussed more fully in Pickersgill (2009a).

While scientists obviously play important roles in the development of clinically-useful neurologic knowledge, the promise of neuroscience can only be fully understood by attending to how it is heard, conceptualised and acted upon by those to who it is made (cf. Myers 1990: 100). Accordingly, interviews with clinicians involved specialists in personality disorder, all of whom worked within one high-security hospital. Though the clinical management of individuals living under a diagnosis of ASPD and psychopathy takes place in a variety of NHS settings, current policy, medical and scientific concern with such individuals is anchored to a particular subgroup housed within a small number of hospitals and prisons. These women and (primarily) men are believed to exhibit the pathology at its most severe and are thus considered to pose a high level of risk to public safety. In this project, it was assumed that if the promise of neuroscience would embed at all within personality disorder practice, it would be most apparent within settings where this subgroup is managed (e.g. the high security hospital chosen for this research) and the anxieties engendered by the ‘problem of personality disorder’ most deeply felt. While, on the one hand, interviewing clinicians from one service has implications for the study generalisability, on the other, it allows for a more in-depth understanding of how that service functions and removes the institutional setting as a factor leading to data variance.

Ethics approval was obtained from the local research ethics committee; all interviews were recorded and transcribed. As with the first set of interviews, questions concerned the aetiology, diagnosis, and management of personality disorder, and the current and potential influence of neuroscience on clinical theory and practice. Discourse analysis (Myers 1990) was used to analyse the data. This was primarily inductive, informed by the research questions and previous empirical theoretical work (Emerson 1983, Murphy 2007). The data was coded in terms of how personality disorders were framed (e.g. as brain disorders, or untreatable, etc.). Once the salience of particular themes became evident, the transcripts were re-analysed to make certain that all relevant text had been coded. Repeated close readings of the transcripts ensured robust coding (though as sole investigator, I could not ensure reliability through inter-rater tests).

**Hope, doubt and resistance**

As we have seen, neuroscience may be ascribed with considerable promise; yet, as will become clear, scientists themselves have mixed views about first, the potential of neuroscience to enhance the management of ASPD and psychopathy through the development of new therapeutic interventions, and second, what those therapies might be.

**Optimism**

In some of the interviews, a narrative of optimism – part of a regime of hope – was readily apparent. Dr B, for instance, remarked that ‘at some point we will have a treatment hopefully soon’. Such therapies might include pharmacological techniques, and Dr B described molecular agents that would ‘boost activity’ in brain systems relating to anxiety. Others considered that serotonergic drugs had potential in the treatment of ASPD. Such drugs would modulate the neurotransmitter serotonin, and help regulate the mood of the individual taking them. Two respondents identified biofeedback (also known as neurofeedback) as deserving of further investigation. In biofeedback therapy, an individual is
presented with real-time data concerning their brainwave activity, which they are then encouraged to adjust through conscious control.

However, none of the scientists offered an especially strong commitment to any of these biological therapies. For instance, despite his initial optimism, Dr B remarked:

At the moment we don’t really know which compounds do what in regard to basic emotional circuitry so it would be in my opinion grossly premature to just start flying pharmacological agents at people with psychopathy. But that knowledge is becoming rapidly available and I just hope we will be attempting treatment studies in at least the next ten years if not sooner (Dr B).

While Dr B was clearly committed to the promise of neuroscience, he nevertheless found himself within a regime of truth: Dr B was cautious about the scientific claims that could be made on the basis of the current state of neuroscience knowledge, and wary of their potential to be translated into clinical practice.

Importantly, most of the scientists considered that biological interventions should be used alongside psychotherapeutic strategies. Dr D, for example, thought that though some kind of psychopharmacological management technique for psychopathy was likely to be necessary, she was ‘not sure exactly what that’s going to be’, and considered that neuroscience could help inform psychological interventions. Dr F also described how biological and psychological therapies might be used together in managing ASPD, but only after the particular ‘type’ of ASPD had been ascertained:

Yes there are people with low scores on [the] psychopathy checklist that’s still having ASPD who are just very impulsive and respond quite well to structured environment, who do respond to feedback, who may respond to serotonergic drugs, and so it’s clinically I think very important to differentiate the different types (Dr F).

Indeed, some of the scientists spoke only of biological interventions when explicitly prompted. Instead, they emphasised psychological techniques such as cognitive behavioural therapy (CBT) which were aimed at (re)regulating thought and conduct. CBT is a highly regarded evidence-based psychological therapy through which patients’ ways of thinking about and affective responses to situations (and the behaviour performed as a consequence) are identified and questioned by a therapist, and eventually replaced by more socially-appropriate patterns that are less troubling to the patient (Sperry 2006). That such techniques were emphasised by the scientists interviewed suggests that it is problematic to assume that neuroscience seeks to position psychopathology and its treatment solely within the brain.

Specifically, the promise of neuroscience research for psychological therapies was located in its potential to clarify which brain areas were involved in personality disorder, and to render less opaque the multimodal aetiology of these disorders. Psychological therapies such as CBT could then be better targeted towards addressing the precise needs of individuals categorised with conditions like ASPD or psychopathy. Dr H was acquainted with a clinician who was attempting to integrate neuroscience research into his practice in this way:

I know actually of a [clinician] colleague who has become interested in the […] cognitive neuroscience research in psychopathy and is now adapting some of his treatment programmes and doing a study of looking whether […] different kind[s] of treatment regimes may be more for those with psychopathy, taking into account what we know is going on with these individuals in terms of their cognition and affect (Dr H).
We can thus see that ambivalent as the respondents were about the immediate potential of neuroscience to shape the development and implementation of biological techniques, they were far more positive about the promise that their own and others’ researches held for psychological interventions.

**Pessimism**

In spite of the cautious optimism expressed by the respondents, current work in neuroscience was not, however, envisioned as translating unproblematically into new interventions. Rather, some interviewees framed neuroscience as a tool for elucidating which interventions would *not* be productive to attempt in the first place. As Dr A argued:

> [T]he neurobiological stuff that’s been implied indicates quite strongly the emotive colouring that we should have underlying statements, verbal statements and so forth is actually missing [in individuals characterised as psychopathic]. […] And clinicians should be able to make use of that, and this means that clinicians should never try emotion-based therapy or insight orientated therapy on psychopaths because they just don’t get it (Dr A).

Dr B thought similarly, arguing that the best scientific research had achieved to date in terms of clinical utility was to contribute to the demarcation of individuals who were not psychopathic, and therefore treatable, from those that did meet the criteria for psychopathy – and consequently not currently treatable:

> At the moment […] the only good thing about it is that we actually point to those people that currently cannot be helped by conventional treatment particularly successfully but that means that it’s much more easy to identify those individuals that can be helped by current treatment. So […] those that are […] doing antisocial behaviour because of elevated levels of aggression can be helped by quite a large number of pharmacological and […] cognitive behavioural treatments that are available for elevated anxiety (Dr B).

From Dr B’s comments, we can begin to see how the respondents’ views about the applicability of neuroscience research to the problem of personality disorder were structured by broader understandings of the ontology of personality disorder; specifically, its resistance to being remoulded through the skilled application of biomedical knowledge. More plainly: personality disorders – particularly psychopathy – were not viewed as especially treatable conditions.

The comments of Dr H and certain other respondents exemplify these ascriptions of resistance to personality disorder. As we saw earlier, Dr H had a clinician colleague who was attempting to use neuroscience to inform his practice. While Dr H was optimistic about the contribution neuroscientific research such as her own might make to clinical work, she nevertheless highlighted limitations to therapy:

> Of course what he’s not doing is he’s not making these wonderfully cuddly empathetic citizens, they probably don’t have the brain machinery to ever be that way, but he’s using something that’s there in these individuals to implement a behaviour modification programme that actually has a chance of functioning rather than trying to round up a system that is not even there (Dr H).

Like Dr H, Dr A was also pessimistic about what specialists refer to as the ‘treatability’ of psychopathy. He argued that because the underlying personality traits in individuals
characterised with the disorder were relatively enduring, ‘treatment programmes are not going to change anything of fundamental importance in the psychopath’. In particular, Dr A was scornful of prison treatment programmes that aimed at enacting some kind of personality change in individuals, such as increasing their levels of empathy:

Teach empathy! Yeah so, get in touch with him, get inside the skin of the victims, understand what she’s going through when you assault her and do that sort of thing to her. And of course what happens is nothing. So, they don’t change, the behaviours don’t change and so forth. So any programme of treatment will have to direct that at their actual behaviour, and maybe make use of their, say heightened self-interest. There are different ways to get what you want without having to screw everybody around, right? But you don’t try to change the underlying personality structure (Dr A).

Ascriptions of ontological obduracy should not, however, be read as necessarily linked to a blithely biologistic envisioning of personality disorder. Dr C, for instance, did not believe that organic factors could fully explain the development of psychopathy, and thus, there could be no easy biological therapeutic solution:

I should say that I don’t think that [a] biological determinant of that sort of behaviour is necessarily going to explain a huge amount of variance. I’m fairly sceptical about the idea that […] biological factors are some sort of […] magic bullet, they’re not. They might tell you a little bit about how […] certain disorders such as psychopathy develop, neuro-developmentally and it might tell you a little bit about the phenotype that you get when you get […] the full manifestation in adulthood, but I don’t necessarily think that if we understood these biological processes, that we necessarily are going to be able to change behaviour (Dr C).

More generally, Dr C – as well as Drs A, D and H – was also cautious about the claims that could be made about personality disorder upon the basis of neuroscience. Dr C noted that part of his caution regarding new scientific knowledge in this area was as a consequence of its resonance with far older ideas generated through different knowledge practices with their own specific epistemological and ontological underpinnings:

I think one really has to be kind of deliberately cautious about what neuroscience is actually telling you. Those theories really ought to be subjected to very severe scrutiny. One of the reasons I think that is because a lot of them rehash ideas that are really quite old […] the only difference is that you’ve kind of instantiated it in what you think is an appropriate neural circuit (Dr C).

This recasting of new scientific knowledge as a simple neurobiologisation of longstanding ideas was also apparent in Dr A’s talk: ‘I think most of the laboratory experimental research is simply validating, supporting what clinicians have been saying for a long time’.

With the above comments in mind, the limits outlined by Dr D regarding the clinical and criminological utility of neuroscience are more comprehensible:

I really see brain imaging should be viewed as just another dependent variable and it shouldn’t be seen as kind of a panacea for ‘hey their brain is different so they’re bad and then they should just be locked up’, or that you know, even if you can study them [psychopaths] pre-emptively before they even […] commit a crime or something like that,
should we be treating them, I think that you need to [...] educate people that this brain imaging data is just another variable that doesn’t necessarily [...] indicate causation, it certainly doesn’t (Dr D).

Working researchers thus do not tend to significantly foreground the potential of their work to enhance clinical practice. Indeed, as Dr H reflected, popular commentary about the promise of neuroscience might, in fact, be bad for the discipline, leading to negative expectations that were scientifically unfeasible but which nevertheless had considerable import for the public image of neuroscience:

I think people tend to get this horrible idea that ok if [...] neuroscience informs treatment that it means we’re going to brain scan people and decide what’s going to happen to them. I really don’t believe – I mean brain scanning’s just not good enough to give that kind of, suddenly tell exactly what somebody’s going to do and what you need to do with them (Dr H).

From these comments, we can clearly see that even specialists in the neurologic aspects of personality disorder do not necessarily regard neuroscience as the answer to the clinical, ethical and political problems presented by ASPD and psychopathy.

**Transparency, authority and utility**

Within clinical practice, the promise of neuroscience has considerable traction, acting as an interpretative framework with which understandings of patients and treatment can be articulated. Neuroscience research (broadly conceived) into personality disorder is viewed by many as having ‘great potential’ (Dr 5, psychiatrist) to enhance the work of mental health professionals; for instance, to help better understand patients and their pathologies. However, the discourses of neuroscience are not always viewed as promissory; indeed, as we will see, some clinicians view these as inherently discouraging.

**Aetiology**

Personality disorders associated with antisocial behaviour have long been opaque constructs, and uncertainties abound about the multiple causes of these conditions; indeed, there is considerable ambiguity concerning what they actually are (Pickersgill 2009a, 2009b, in press). Every psychiatrist and psychologist spoken with during the course of this research agreed that aspects of diverse ontological realms (biological, psychological and social) all played roles in the development of personality disorder, and potentially impacted upon the function and structure of the brains of individuals categorised with these conditions. As one psychiatrist put it:

I suspect in the end it’s the usual story of there’s a genetic vulnerability which given the appropriate environmental circumstance leads to the development of the disorder (Dr 1, psychiatrist).

These environmental, psychological and biological ‘factors’ were themselves heterogeneous. In response to a question about the causes of ASPD, Dr 8, a clinical psychologist, gave a typically wide-ranging reply:
Social deprivation, abuse, physical, sexual, emotional, neglect, I suppose you could say poor parenting if you like, but lack of boundaries, lack of consistency [...] I’m aware there’s a genetic component [...] factors of personality traits such as impulsivity and emotional regulation, which are all contributing factors (Dr 8, clinical psychologist).¹

In different individuals, these heterogeneous factors came to interact in unique ways to effect the development of personality disorder. In other words, there were different ways of producing ASPD: ‘different people have different aetiologies. Or at least different emphases in aetiology, even though all the factors might be important’ (Dr 5, psychiatrist). While some clinicians assigned greater significance to one or another of these factors, all drew – explicitly or implicitly – on a broadly biopsychosocial model to explain ASPD. In this sense, these accounts resonate with the broader contemporary British discourse in personality disorder, which paints a vivid picture of a multimodal and pluriapotential disorder enacted through the interrelations of social, psychological and biological factors (e.g. Coid 2003, Bradley et al. 2005, Rutter 2005).

The aetiology of personality disorder is thus extremely ‘complicated’ (Dr 3, clinical psychologist). Each developmental factor is thought to interact with the others in varied and ‘complex ways that we don’t necessarily always understand’ (Dr 7, clinical psychologist). The sheer diversity of the various variables implicated in the aetiology of personality disorder ensures the precise developmental mechanisms remain ‘largely unknown’ (Dr 2, clinical psychologist). Consequently, it was generally understood that much work remained to be done in fully elucidating the aetiology of ASPD; ‘tons’ (Dr 9, psychiatrist), in fact. In spite of the long history of debate on personality disorder within psychiatry (Berrios 1993), Dr 1, a psychiatrist, remarked that:

> I think we are very early in the development of models of aetiology and [...] treatment and outcomes, I think there’s lots of work to be done. I mean I think we’re very, very early on really (Dr 1, psychiatrist).

In spite of their ambiguity, personality disorders were nevertheless viewed by those interviewed as amenable to technoscientific visualisation. Some believed that the uncertainty so characteristic of these conditions could be lessened through neuroscientific investigation. For instance, the ‘different pathways’ (Dr 9, psychiatrist), that led to ASPD might be rendered more transparent through the application of neuroscience. In particular, brain imaging techniques would be a powerful aid in this endeavour. Research using these could, for instance, reveal distinct ‘neurological [...] characteristics’ (Dr 9, psychiatrist) for different kinds of ASPD, creating ‘a new language’ for articulating personality disorder and performing it through practice; clinicians might then ‘talk about it as either cortex or whatever related’ (Dr 9, psychiatrist).²

Neuroscientific techniques – particularly imaging technologies like fMRI – were thus seen as powerful resources upon which to draw in clarifying the uncertain ontology of ASPD. Even Dr 8, a clinical psychologist who understood personality disorder primarily (but not exclusively) in terms of social and psychological factors, framed neuroscience as promissory:

> I think [...] it’s like anything, I think it has to be looked at, researched and understood, ‘cos it can only contribute to our understanding of, of other issues, and I certainly don’t see it as being separate [...] from therapy and everything. I think it can be used, yeah, very usefully.
The therapeutic promise is thus instantiated through the perceived facility of neuroscience to make clear the ambiguous ontology of personality disorder and, consequently, to provide an indication of how it might be treated. This potential is a function of the understandings clinicians have of personality disorder; though they are unsure of what, exactly, it is caused by, all posit at least some role for biology – a role that may be made legible through techniques like positron emission tomography (PET) and functional magnetic resonance imaging (fMRI).

Translation

In spite of such evident awareness of and optimism regarding the neurosciences, research in this area is not necessarily informing clinical practice. Rather, there appears to be a gap between the formal scientific research shown to be part of psychiatric discourse, and the day-to-day clinical work of mental health professionals. While some of the practitioners spoken with and observed were enthusiastic about neuroscience, their enthusiasm was located in its potential for the future, rather than any specific present benefit. As psychiatrist Dr 1 put it: ‘I don’t see that the neuroscience [...] has made that much of a difference in the actual day to day delivery of care and treatment’.

In particular, scientific knowledge was not viewed as clinically useful:

[At the moment it’s at a level of interest rather than a level of usefulness. I’ve not actually seen for example the work of James Blair [a prominent researcher at the US National Institute of Mental Health], how that could influence delivery of treatment (Dr 3, clinical psychologist).

Dr 4, a clinical psychologist, clearly articulated this tension between scientific interest and clinical utility when asked if and how neuroscience had impacted upon her practice:

I don’t know. I’m having problems here because I’m talking as a clinician. There is certainly a role for neuroscientific research to look at personality disorders and see what comes up and if they find that there are brain functions that are different, or there’s damaged bits, or there are bits that cause, have a causal link to personality disorder, it needs to be investigated. But at the moment it doesn’t help me very much. I’m being very selfish in the way I’m looking at this. [...] You know as a clinician going in to try and change people it doesn’t help me at all (Dr 4, clinical psychologist).

In spite of this, neuroscientific knowledge was considered by many clinicians to be ‘really useful to know’ (Dr 8, clinical psychologist); for instance, making it ‘easier’ (Dr 6, psychiatrist), to empathise with patients. Underscoring the authority ascribed to neuroscience through its ability to render the abstract more concrete (Dumit 2004, Joyce 2008), Dr 6, a psychiatrist, noted, ‘There’s something more tangible about there being neurology involved as well’. In Dr 9’s words, neuroscience gave ASPD ‘another extra layer of validity’ (Dr 9, psychiatrist), legitimising, therefore, clinical attention to what is a contested disorder. This additional, more objective knowledge engendered clinical reflection over the nature of antisociality:

I suppose that for me raises big challenges about what self-control and self-regulation is, and to what extent are any of us in control of our behaviour, and to what extent our behaviour’s controlled by processes of which we are aware or conscious. And I suppose

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neuroscience is challenging that, you know those notions about free will (Dr 2, clinical psychologist).

However, if neuroscience was a stimulus for reflection by some practitioners, it also evoked indignation in others, leading them to ignore neurologic claims. This was apparent when neuroscientists, in their published reports and conference presentations, advanced findings that were construed as incompatible with clinical aims:

What I don’t like is the neuroscientific approach that says, the James Blairs of this world that say, that seem to be saying and I may well have been misreading him, that seem to be saying, well you know they’ve started off with neuropsychological deficits and they’ll carry on with it and there’s not a lot that can be done. Because I just don’t agree with that. I might be – I might be doing him a huge disservice and he might be saying you need to be coming at it from a different angle, in which case I’d be listening harder (Dr 4, clinical psychologist).

Dr 4 is not alone in her aversion to certain neuroscientific arguments. Generally, influential neuroscientists (‘the James Blairs’), are considered unhelpful if they make what are construed as therapeutically-nihilist and reductionist assertions of a linear deterministic relationship between brain, personality and behaviour. As clinical psychologist Dr 7 asserted, if neuroscientists advanced arguments along the lines of ‘well, therefore we can’t do anything for them, because they can’t re-grow their frontal lobes’, they would be ignored. Clearly, research findings that align with the therapeutic aims of clinicians are given more credence than neurologic knowledge that is contrary to their work.

We can see, therefore, that the relationship mental health professionals have with the neurosciences is deeply ambivalent. On the one hand, neuroscience is imbued with epistemic primacy; experimental paradigms involving imaging techniques like PET and fMRI are powerful tools through which the complexities of personality disorder can be rendered intelligible. On the other, neuroscientific research is dismissed if claims based upon it are deemed antagonistic to clinical work and the assumptions about personality disorder underpinning it.

With this in mind, it is unsurprising that some psychiatrists and many psychologists are cautious about relying on or investing too much hope in neuroscientific research. Caution was often sounded over getting too ‘wrapped up in our high-tech toys’ (Dr 2, clinical psychologist), given how ‘fashionable’ it is to talk about some sort of neuroscience underpinnings to whatever you’re doing’. The hype of neuroscience, no doubt essential to the consolidation of its authority, might thus also be cause for concern:

There are some issues about the neuroscience that I worry about, in terms of there’s a lot of noise in the system, [...] I’m not sure that [...] some of the scanning studies actually definitely show what people think they show (Dr 3, clinical psychologist).

These personality disorder specialists’ ambivalent readings of brain research, evocative of both regimes of hope and of truth, are not necessarily out of step with the views of the wider professional communities to which they belong. While neuroscience in general remains a prestigious facet of contemporary biomedicine, even those optimistic about its future are sceptical about the degree to which it is currently transforming practice. A 2003 editorial in the British Journal of Psychiatry, for example, cast a critical eye over neuroscientific research into psychopathology, noting that, as yet, little clinically useful knowledge had arisen from
the multitude of studies undertaken; accordingly, ‘scepticism is common’ (Bullmore and Fletcher 2003: 381). Others (e.g. Eisenberg 2000, Benning 2003, Gabbard 2005), are similarly reflective of or even antagonistic towards what is perceived to be a wider tendency towards biological reductionism within mental health research and practice. The ambivalence of the clinicians discussed here regarding neuroscience is thus less surprising when considered in the context of psychiatry more broadly.

**Discussion: when a promise isn’t a promise**

In this article I have drawn attention to the problematic nature of the therapeutic promise of the neurosciences. While there may exist a broader promissory discourse pertaining to the faculty of neuroscience to improve the clinical management of severe psychopathologies, the embedding of this therapeutic promise within the talk and practice of scientists and mental health professionals is far from straightforward. This study has shown that neuroscience engenders considerable ambivalence, expressed both by clinicians and scientists themselves. In the idiom of Moreira and Palladino (2005), we might understand this as being forged through the interlocking regimes of hope and truth that shape contemporary biomedicine: a simultaneous hope for new treatments, burgeoning from neuroscience research, that will ameliorate the ‘problem of personality disorder’, and an investment in the day-to-day truths of clinical practice and its representation in psychiatric discourse where in personality disorders are intractable and complex conditions that commonly resist treatment by psychiatrists and psychologists. Such understandable ambivalences direct our attention to practical issues surrounding the potential of neuroscience to translate into and enhance clinical practice, as well as theoretical concerns revolving around the place and role of the biological within contemporary neuroscience and psychiatry.

Congruent with the notion of a therapeutic promise, some of the scientists interviewed had positive expectations regarding their work, believing that it will, one day, enhance practice. In line with a broader move towards techno-somatic (Pickersgill 2009a, 2010) approaches within contemporary psychiatry that privilege first, the body as a locus for mental disorder, and second, technoscience as a means of understanding it; some of the scientists considered that their investigations might shed light on what drugs might best be suited for managing personality disorder. Yet, their research was largely perceived as being most useful for improving existing psychological therapies. This is an important finding that stands in stark contrast to the assertions of other commentators on neuroscience and society (in particular, see Rose 2007: 209) which suggest that explicitly biological management strategies are an inevitable corollary of the neurologic study of mental disorder.

At the same time, the ambivalence regarding future somatic therapies for personality disorder draws our attention to the complex place of the biological within neuroscience and psychiatry (Pickersgill 2009a, 2010): the ontological imaginaries of psychopathology that structure professional practice in both laboratory and clinic are far more multifaceted than simplistic characterisations of so-called ‘biological psychiatry’ give credit for. While others have asserted that in psychiatric thought ‘social and psychological “factors” simply gave the disease its individual stamp’ (Samson 1995: 250), it seems clear that, in the case of personality disorder at least, scientists and clinicians view the realms of psyche, soma and society as always interacting and co-constitutive of one another (cf. Shostak 2003).

In spite of the therapeutic optimism expressed by some of the respondents, others suggested that severe personality disorders might not be ameliorable through clinical intervention at all. In this case, neuroscientific research might best be used to help identify...
individuals with these conditions and mark them out as untreatable. This disquieting conclusion stems from my interviewees’ understandings of personality disorders – particularly psychopathy – as resistant to the application of clinical knowledge. In effect, the therapeutic promise of neuroscience was neutralised by the scientists’ own perspectives on the ontology of personality disorder, and the thread of determinism that runs through these.

Within the clinic, longstanding questions about the aetiology and ontology of personality disorder remain unresolved (Pickersgill 2009b), and the promise of neuroscience is, perhaps, at its most compelling. Indeed, some of the psychiatrists and psychologists interviewed, spoken with and observed over the course of the research described herein did assert that neuroscientific approaches (such as PET and fMRI studies into the activation of certain regions of the brain associated with emotionality), have the potential to clarify some of problematic ambiguities associated with personality disorders. Practitioners’ hopes were structured, in part, by an understanding of these conditions as having significant biological components. Their optimism can thus be read as an instantiation of a broader techno-somatic ethic within psychiatry; it also mirrors clinicians in other areas of medicine who put considerable faith in the alleged ‘transparency’ of the body to imaging technologies and the power of these to render questions of diagnosis and treatment less complex (Joyce 2008).

However, underscoring the complicated relations between laboratory and clinic (Cullen and Cohn 2006, Wainwright et al. 2006, Martin et al. 2008), neuroscientific knowledge seems, at present, to be making little difference to practice. While the findings of neuroscience research may well be interacting with existing professional understandings of personality disorders, this does not appear to be translating into substantive shifts in the organisation of work at the clinical coalface. Indeed, neurologic claims may be ignored if they counter clinical goals and assumptions, pointing, therefore, to a larger political economy of knowledge within psychiatry and psychology wherein utility trumps epistemology: the facticity of new scientific research is not so much problematised, but self-consciously set aside when it is not deemed clinically useful (cf. Hedgecoe 2008). This entails a reflexive rejection of both the regimes of truth and hope that Moreira and Palladino (2005) articulate: science is neither promissory or true, simply relevant or not.

In sum, this analysis has interrogated the scope and nature of the therapeutic promise of neuroscience, as applied to personality disorder. The embedding of this promise within the talk and practices of scientists and clinicians is dependent on a characterisation of the ontology of psychopathology as first, partly biological, and second, potentially plastic. In cases where the therapeutic promise of neuroscience is an animative theme within medico-scientific discourse, the management strategies that are deemed likely to emerge from neurologic technoscience are not always of the kind we might expect from so-called ‘biological psychiatry’: psychological, as well as or even instead of biological treatments, are emphasised. In practical terms, these findings suggest a more critical appraisal concerning the promise of neuroscience might be required: a re-evaluation of funding strategies that takes into account the gaps between science and practice and the sociotechnical factors (co-)producing these, as well as the ways in which the utility of neuroscience is a function of the (perceived) ontology of psychopathology. However, claims about the (lack of) utility of neuroscience to clinical practice must also be tempered by a reflexive awareness that those clinicians accounting for neuroscience in terms of resistance are, at the same time, also making their own truths about personality disorder. Theoretically, the analysis enjoins further sustained and nuanced sociological attention to how the biological is articulated and positioned within contemporary psychiatry, psychology and neuroscience, and the role of this in structuring professional practices and expectations.

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Acknowledgements

Earlier versions of this paper were presented at the 2009 meeting of the British Sociological Association Medical Sociology Group, as well as at the ESRC Cesagen centre, Cardiff University (and Lancaster University via video link). The audience members are thanked for their helpful comments. The anonymous referees are also gratefully acknowledged for their insightful critique, from which this article has benefited considerably. Thanks are owed too to Graham Martin for his thoughtful reading of an earlier draft of this article, and to Alison Kraft and Paul Martin, for insights provided during the doctoral research (sponsored by the Economic and Social Research Council) upon which this analysis draws. Additional funds were generously provided by the A L Charitable Trust, the British Sociological Association, the Office of NIH History (National Institutes of Health) and the University of Nottingham Graduate School. Additional materials were collected as part of an ESRC-funded project, ‘Constituting Neurologic Subjects: Neuroscience, Identity and Society After the “Decade of the Brain”’.

Notes

1 Indeed, the transgression of these factors between the boundaries of different ontological realms calls into question the very possibility of demarcating the biological, social and psychological within contemporary mental health.

2 It should be noted here that my lack of specificity here reflected that of Dr 9, and the majority of the other clinicians I spoke with or formally interviewed. The precise terminological language evident within neuroscience discourse was commonly genericised into talk of (for example) ‘neuroscanning’ (Dr 9). This lack of familiarity with some of the terms used by and researches of neuroscience investigators underscores the different kinds of gaps between the laboratory and clinic evident in this analysis.

3 It is worth noting, however, that ‘clinical utility’ is not an absolute concept but is instead relational; as changes in psychiatric and neuroscience occur over time, it is feasible that a specific technology or particular set of practices that were once considered not to be useful will one day be understood as having significant clinical utility.

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