Diagnosis and drug treatment

Psychiatrist **JOANNA MONCRIEFF** *dismantles the foundations of her profession.*

THE institution of psychiatry is built on two assumptions: that mental distress and deviant behaviour arise from biological abnormalities, and that biological interventions can resolve them. These foundations form the basis of the claim of the psychiatric profession, as a branch of the medical profession, to be best equipped to manage madness. In an attempt to emulate general medicine psychiatry has attempted to distinguish between different psychiatric diseases, which are each assumed to have their own specific pathology. Treatments are then presented as specific targets for these different diseases.

Unfortunately the evidence suggests that the story is not that simple.

No distinct pathology

There is no convincing evidence that people grouped according to psychiatric diagnoses have distinct underlying pathological profiles. Take schizophrenia, for example. Structural brain abnormalities identified by neuroimaging, predominantly atrophy and corresponding enlargement of the ventricular system, are often cited as evidence for its neuropathological basis. However, the abnormalities that have been found are neither universal nor specific. Similar abnormalities have been identified in samples of patients with post traumatic stress disorder (PTSD) (Nemeroff *et al*., 2005), personality disorder (Irle *et al*., 2005) and depression (Lin *et al*., 2005).

In addition, most of the neuropathology studies have failed to consider the confounding effects of long-term drug treatment or intelligence. Where IQ has been measured, it has been found to be lower overall in patients than controls and associated with brain atrophy (Zipursky *et al*., 1998). Early findings of abnormalities of dopamine receptors in people with schizophrenia turned out to be related to exposure to antipsychotic drugs (Valenstein, 1998). Recent research suggesting that there may be elevations of dopamine in some untreated acutely psychotic patients has not included patients with other diagnoses or controlled for other factors that are known to increase dopamine activity (Moncrieff, 2007). The situation for depression is similar. Despite common beliefs, there is no consistent evidence that there is an abnormality of serotonin or catecholamines in depressed people prior to antidepressant treatment (Moncrieff & Cohen, 2006).

Instead, the major theories of the pathological basis of psychiatric disorders, such as the dopamine theory of schizophrenia and the monoamine theory of depression, have been derived from observations about the mechanism of action of certain types of drugs. They cannot provide independent evidence for the specific action of the drugs concerned.

Disease centred or drug centred?

Because grouping people behaviourally is so difficult and because neuropathological research seems far from identifying any clear neuropathological foundations to current diagnostic entities, the way that psychiatric treatment is practised and understood is one of the most important justifications of the medico-biological approach. Since 1950, drugs are the primary biological intervention in psychiatry. Prior to this, psychiatric patients were exposed to a range of bizarre and degrading physical treatments such as insulin coma therapy, hydrotherapy, brain surgery and ECT, the only one that is still part of standard psychiatric practice (Moncrieff, 1999). Modern drugs are named to convey the impression that they are specific for certain psychiatric disorders and not others. Hence there are 'antidepressants', 'antipsychotics', 'anxiolytics', and 'mood stabilisers'.

However, this 'disease centred' idea of how drugs work has never been firmly established, and I have suggested instead that evidence points towards an alternative 'drug centred' account of the effects of psychiatric drugs (Moncrieff & Cohen, 2005). The disease centred model is captured by the idea that drugs act by correcting or partially correcting an underlying biological lesion, analogous to the way the action of most drugs in general medicine is understood. In contrast the drug centred model suggests that drugs work by inducing their own abnormal brain states. These drug induced states may be useful in some situations. Sedative effects may be useful in states involving acute arousal, including many acute psychiatric conditions. Drugs that can induce indifference such as the neuroleptics (and also opiates) may be uniquely useful in acute psychosis to reduce the distressing nature of psychotic thoughts. Low dose stimulants may be useful in prolonging concentration and attention in the short term.

The drug centred model was how drug action was understood prior to the 1950s when most psychiatric drugs were regarded simply as different sorts of sedatives, or chemical restraints (Moncrieff, 1999). It was the physical treatments, such as insulin coma therapy and ECT that were regarded as specific treatments. They were psychiatry's great hope for rehabilitating its

DISCUSS AND DEBATE

What evidence is there that psychiatric drugs correct biochemical abnormalities?

How does drug treatment help to justify the process of diagnosis?

Are drug-induced states helpful to people with psychological problems?

How can we approach drug treatment in a more balanced way?

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failing reputation through a closer alliance with general medicine. When chlorpromazine and related drugs were first introduced a drug centred mode of understanding persisted for a while, with vivid descriptions of their unique ability to tranquillise without inducing sleep and to induce a sort of drug induced indifference which was likened to a chemical lobotomy.

However, the emphasis changed again in the 1960s. New drugs were enthusiastically embraced as disease specific treatments, just as the physical treatments had been, before there was any attempt to test out the presumptions of this idea (Moncrieff, 1999; Moncrieff & Cohen, 2005). Lithium was probably the first example of a drug advanced as a disease specific treatment. Despite abundant evidence that lithium is a toxic substance that exerts its effects through a profound sedation, it is still characterised as a specific treatment for affective disorders, especially bipolar disorder (Moncrieff, 1997).

A chemical cosh?

The disease centred model is also contradicted by a great deal of evidence over specificity of treatment (Moncrieff & Cohen, 2005).

When supposedly specific drugs (such as antipsychotics or antidepressants) are compared with non-specific ones (such as benzodiazepines), studies fail to confirm that the specific drugs work better than the non-specific ones. Studies comparing antipsychotics and lithium have not shown that lithium is specific for people with manic depression or affective psychoses (Moncrieff & Cohen, 2005).

In fact, the effects of the drugs may not even be specific to the mentally ill. According to the disease centred model drugs should only exert their effects in an abnormal nervous system. Yet studies with non-depressed human volunteers show that drugs induce characteristic states that are consistent with patients' descriptions and side effect profiles.

Neither are supposedly disease specific drugs reliably supported by animal models of psychiatric disorders. For example, animal models of depression frequently show positive effects with drugs not considered to be antidepressants. Conversely some types of antidepressant, notably SSRIs, often fail to produce positive effects (Bourin *et al*., 2001).

The field is also hampered by poorly designed research. Studies that are cited to show the specific efficacy of certain drugs usually involve the use of outcome measures that include many items, such as poor sleep, or signs of over-arousal, that would respond to non-specific effects such as sedation.

Perhaps most damning of all is the fact that the introduction of new specific drugs has not improved the prognosis of major psychiatric disorders (Carpenter, 1997).

Awakenings

The disease based model of drug action has been popular, influential and enduring, despite the lack of evidence to support it, because it brings psychiatry into line with medical practice by suggesting that there are specific physical treatments for different psychiatric diagnoses. This supports the psychiatric profession's claim to manage madness from a medical perspective.

However, the failings of the medico-biological approach to madness and mental distress are obvious and frustrating to many psychiatrists as well as other mental health professionals and service users. Medical doctors, including psychiatrists, are beginning to become more aware of the compromising influence of the pharmaceutical industry over medical and psychiatric practice and many are enthusiastic about non-drug-based interventions. Some are concerned about the possible damage that may be done by long-term psychiatric drug use, both physical and psychological, the latter by inducing dependence and chronicity, and aggravating certain psychological symptoms.

The Critical Psychiatry Network (*www.critpsynet.freeuk.com*) is a UK-based group of psychiatrists who are unhappy with the medical-biological approach to understanding and managing madness. Members of this group are interested in different philosophical approaches which see madness as a meaningful individual response to the world and 'treatment' as an individual journey of recovery (Braken & Thomas, 2005). Professionals may be able to help with this journey but help from family, friends and other service users may be more important.

In an era of increasing psychotropic drug use and promises of developments such as genetically targeted drugs, it is important that the models of drug action that form the basis of understanding and research are not misleading. I propose that the drug centred model of drug action helps best illuminate what drugs can achieve, and also what they cannot achieve and what negative effects might occur. Since the utility of drugs is not derived from an esoteric disease model, but from immediate subjective experience, doctors need to work in partnership with patients, listening to their evaluations of different drugs and helping them to weigh up pros and cons. It is important to identify patients and others specific targets for drug treatment, to match targets with known drug induced effects and monitor the utility of those effects. This model can therefore help clinicians to move on from the sterile and reductionist idea that understanding madness and distress is achieved by applying a diagnostic label, and to instead enable them to offer help that is really useful and empowering.

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References

Bourin, M., Fiocco, A.J. & Clenet, F. (2001). How valuable are animal models in defining antidepressant activity? *Human Psychpharmacology and Clinical Experimentation, 16*, 9–21.

Bracken, P. & Thomas, P. (2005). *Postpsychiatry. Mental health in a post modern world*. Oxford: Oxford University Press.

Carpenter, W.T. (1997). The risk of medication free research. *Schizophrenia Bulletin, 23*, 11–18.

Irle, E., Lange, C. & Sachsse, U. (2005). Reduced size and abnormal asymmetry of parietal cortex in women with borderline personality disorder. *Biological Psychiatry, 15*, 173–182.

Lin, H.F., Kuo, Y.T., Chiang, I.C., Chen, H.M. & Chen, C.S. (2005). Structural abnormality on brain magnetic resonance imaging in late onset major depressive disorder. *Kaohsiung Journal Medical Science, 21*, 405–411.

Moncrieff, J. (1997). Lithium reconsidered. *British Journal of Psychiatry, 171*, 113–119.

Moncrieff, J. (1999). An investigation into the precedents of modern drug treatment in psychiatry. *History of Psychiatry, 10*, 475–490.

Moncrieff, J. (2007). *The dopamine theory of schizophrenia and psychosis: How does the evidence stand now?* Manuscript submitted for publication.

Moncrieff, J. & Cohen, D. (2005). Rethinking models of psychotropic drug action. *Psychotherapy and Psychosomatics, 74*, 145–153.

Moncrieff, J. & Cohen, D. (2006). Do antidepressants cure or create abnormal brain states? *PLoS Medicine, 3*(7), e240.

Nemeroff, C.B., Bremner, J.D., Foa, E.B. *et al.* (2006). Post traumatic stress disorder: A state of the science review. *Journal of Psychiatric Research, 40*, 1–21.,

Valenstein, E. (1998). *Blaming the brain*. New York: The Free Press.

Zipursky, R.B., Lambe, E.K., Kapur, S. & Mikulis, D.J. (1998). Cerebral gray matter volume deficits in first episode psychosis. *Archives General Psychiatry, 55*, 540–546.