

01 - 1 Thinking about psychiatry

1 Thinking about psychiatry

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2 Chapter 1 Thinking about psychiatry First thoughts In the stanzas (see Box 1.1), the satirist Alexander Pope captured the essence of the then ongoing European Enlightenment, inspiring his readers to use their sense of reason to replace irrationality in their exploration of the world. This period also saw the re-emergence of attempts to use the same methods of thinking to study mental illness, whose sufferers had then spent more than a thousand years as objects of fear and superstition. Pope's words resonate even today, nearly three centuries later, when—confronted with patients thinking 'too little or too much' or in 'chaos of thought and passion all confused'—we are still struggling to use science to guide the exploration of this 'riddle of the world'. Psychiatry has often been derided as the Cinderella specialty—poorly funded, exiled to outside hospitals, a victim of rushed political experiments, castigated by anti-psychiatrists, its intellectual basis ridiculed, and the self-confidence of its practitioners lowered. As a trainee psychiatrist, you will have to cope with questions like 'are you a real doctor?' In addition, the general public (and sometimes other medical professionals) frequently misunderstand the types and severity of illnesses that you deal with. Either they picture you spending all of your time tending to Woody Allen-like self-obsessed, befuddled neurotics or guarding Hannibal Lecter-like murdering psychopaths. The reality is that psychiatrists deal with the most common human disorders which cause the greatest morbidity worldwide. Psychiatry considers all aspects of human experience over the whole of the lifespan: elation, grief, anxieties, flights of fancy, confusion, despair, perception and misperception, and memory and its loss. We see the mother with a healthy baby, perplexed and frightened by her tearfulness and inability to cope, and terrified by her thoughts of harming her child. We see the family of a young man who have watched him become a stranger, muttering wild accusations about conspiracies, and we aim to be the doctors who know what best to do in these circumstances. The specialty of psychiatry is (or should be) the most 'human' specialty—devoted to the understanding of the whole person in health and illness. Indeed, it is the

only medical specialty without a veterinary counterpart. It is certainly true that the level of knowledge about causation and treatment of mental disorders is less advanced than for other branches of medicine. In some ways, however, this is an attraction. In other specialties, much of what was formerly mysterious is now understood, and interventions and diagnostic methods once fantastic are now quotidian. Psychiatry offers a final frontier of diagnostic uncertainty and an undiscovered country of aetiology to explore. Perhaps the lack of progress made in psychiatry, compared with the other specialties, is not because of lack of will or intelligence of the practitioners, but due to the inherent toughness of the problems. To put this another way, all scientists 'stand on the shoulders of giants'—in psychiatry, we have no fewer and no shorter giants, just a higher wall to peer over.

Box 1.1 The proper study of mankind
 Know then thyself, presume not God to scan
 The proper study of mankind is man
 Placed on this isthmus of a middle state
 A being darkly wise, and rudely great
 With too much knowledge for the sceptic side
 With too much weakness for the stoic's pride
 He hangs between, in doubt to act, or rest
 In doubt to deem himself a God, or Beast
 In doubt his mind or body to prefer
 Born but to die, and reasoning but to err
 Alike in ignorance, his reason such
 Whether he thinks too little, or too much
 Chaos of thought and passion, all confused
 Still by himself abuse, or disabuse
 Created half to rise, and half to fall
 Great lord of all things, yet a prey to all
 Sole judge of truth, in endless error hurled
 The glory, jest, and riddle of the world
 Go, wondrous creature! Mount where Science guides
 Go, measure earth, weigh air and state the tides
 Instruct the planets in what orbs to run
 Correct old time, and regulate the sun
 Go, soar with Plato to the empyreal sphere
 To the first good, first perfect, and first fair
 Or tread the mazy round his followers trod
 And quitting sense call imitating God
 As Eastern priests in giddy circles run
 And turn their heads to imitate the Sun
 Go, teach Eternal Wisdom how to rule
 Then drop into thyself, and be a fool
 Superior being, when of late they saw
 A mortal man unfold all Nature's law
 Admired such wisdom in an earthly shape
 And showed a Newton as we show an Ape
 Could he, whose rules the rapid comet bind
 Describe or fix one movement of his mind
 Who saw its fires here rise, and there descend,
 Explain his own beginning, or his end?
 Alas what wonder! Man's superior part
 Unchecked may rise, and climb from art to art
 But when his own great work is but begun
 What reason weaves, by passion is undone
 Trace science then, with modesty thy guide
 First strip off all her equipage of pride
 First thoughts (Continued)

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 Deduct what is but vanity, or dress
 Or learning's luxury, or idleness
 Or tricks to show the stretch of human brain
 Mere curious pleasure, ingenious pain
 Expunge the whole, or lop the excrescent parts
 Of all, our vices have created arts
 Then see how little the remaining sum
 Which served the past, and must the times to come!
 From Alexander Pope (1688–1744). *An Essay on Man*. As reproduced in *Poetical Works*, ed. Cary HF (London: Routledge, 1870), 225–6. Box 1.1 (Contd.)

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 What is disease? Most mental diagnoses have had their validity questioned at several points in their history. Diagnosed by doctors on the basis of symptoms alone, some people find their presence difficult to accept in a field which has been almost universally successful in finding demonstrable physical pathology or infection. Disease in medicine as a whole was not always based on pathology. The microscope was developed long after

doctors began to make disease attributions. Thomas Sydenham developed the medico-pathological model based on symptoms, but it has grown to incorporate information obtained from post-mortem and tissue examination. This model of disease has become synonymous in many people's minds with a model based solely on demonstrably abnormal structure. Thomas Szasz (E Box 1.6, p. 29) has criticized psychiatry in general by suggesting that its diseases fail when this model is applied. This argument that psychiatric diagnoses are invalid still strikes a chord with many doctors and non-medical academics. When the BMJ conducted a survey of non-disease^{1,2} (see Fig. 1.1), many people thought depression to be a non-disease, although schizophrenia and alcoholism fared somewhat better. It is clear from the graph that many conditions rated as real diseases have a characteristic pathology, although some do not (alcoholism, epilepsy). Similarly, many people regard head injury and duodenal ulcer as non-disease, although their pathology is well described. There are several models of disease in existence (see Table 1.1). No single model is adequate by itself, and diseases may move from one group to another. Models based on aetiology or pathology have been found to be the most useful, but the reality may be that 'disease' is a concept which will tend to change over time and has no real existence in itself.

Table 1.1 Models of disease

Model	Summary of assumptions
Medical-pathological definition (Sydenham, 1696; Szasz, 1960)	Assumes diseases are associated with a necessary cause (e.g. bacterial infection) or have a replicable morbid anatomy
Biological disadvantage (Scadding, 1972)	Assumes that sufferers from a disease have a common characteristic to place them at a biological disadvantage
Plan of action (Linder, 1965)	Assumes disease labels are justifications for treatments and further investigations
Syndrome with characteristic symptoms/outcome (Kendell, 1975)	Assumes diseases represent circumscribed concepts distinguished from others by a bimodal distribution of scores on a discriminant function
Disease as imperfection (Cohen, 1943; 1953)	Assumes diseases are quantitative or qualitative deviations from a desirable norm
Disease as 'concept' (Aristotle)	Assumes diseases are man-made abstractions with no independent existence

What is disease? ¹ Smith R (2002) In search of 'non-disease'. BMJ 324: 883-5. ² Campbell EJ, Scadding JG, Roberts RS (1979) The concept of disease. BMJ 2:757-62.

Malaria Tuberculosis Cancer of the lung Syphilis Poliomyelitis Emphysema Measles Diabetes mellitus Multiple sclerosis Muscular dystrophy Pneumonia Cirrhosis of the liver Asthma Haemophilia Alcoholism Epilepsy Coronary thrombosis High blood pressure Schizophrenia Hypertension Acne vulgaris Gallstones Hay fever Duodenal ulcer Depression Piles (haemorrhoids) Lead poisoning Carbon monoxide poisoning Senility Hangover Fractured skull Heatstroke Tennis elbow Colour blindness Malnutrition Barbiturate overdose Drowning Starvation

0 10 30 50 70 90 Percentage of respondents classifying condition as disease

Non-medical academic (reference group) Secondary school students

Fig. 1.1 Percentage of respondents classifying a condition as a disease. Reproduced from Smith R (2002) In search of 'non-disease'. Br Med J 324: 883-5 with permission of BMJ Publishing Group.

8 Chapter 1 Thinking about psychiatry The role of the psychiatrist What is illness? Doctors, being generally practical people, busy themselves with the diagnosis and treatment of various types of illness. They rarely ask 'what is illness?' or 'what is health?' For several reasons, this type of questioning is more germane for psychiatrists:

- While all illnesses have subjective components, psychiatric disorders are usually completely diagnosed by the patient's subjective experiences, rather than objective abnormalities.
- There is a non-absolute value judgement involved in the diagnosis of mental disorder, e.g. wheeze and dyspnoea are abnormal and signs of disease, but

some degree of anxiety at times is a common experience and the point at which it is pathological is debatable.

- Mental illnesses have legal consequences.
- It is important psychiatrists are clear about which behaviours and abnormalities are their province.

Psychiatrists have been involved in human rights abuses in states around the world when definitions of mental illness were expanded to take in political insubordination. Disease, sickness, and illness behaviour

The distinction between disease (or disorder) and sickness should be understood. Disease encompasses either a specific tissue lesion or a characteristic constellation of symptoms. Sickness, on the other hand, encompasses the suffering and functional deficit consequent on symptoms. One may exist without the other, e.g. a patient with undiagnosed, asymptomatic breast cancer undoubtedly has disease but is not sick; a patient with chronic fatigue syndrome may see themselves (and be considered) as sick but does not have an identifiable lesion. Patients generally present complaining of symptoms, and this process is called illness or illness behaviour. Patients need not be suffering from a disease or disorder in order to do this, and sometimes illness behaviour may be abnormal (even when the patient does have a disease). Subject to certain social conventions (e.g. attending a doctor), they are then afforded the 'sick role', which allows them to relinquish some of their normal obligations. This is a man-made concept, encompassing the special rights and expected behaviour of both someone who is sick and the doctor who is treating them (see Table 1.2). Difficulties arise when a person adopts the sick role to gain the rights afforded to them, while neglecting their duties. Another concern relates to the process of diagnosis—causing someone who is not currently ill to adopt the 'sick role'. Doctors should understand their special responsibility to act in the patient's best interests and not to stray outside their area of expertise. Clarity of roles

It is all too easy for psychiatrists to slip into other roles than that which is properly theirs—an expert in mental disorder. These may include: substitute parent, 'friend', guardian of public morals, predictor of future criminality, arbiter of normal behaviour. Psychiatrists have special training and experience in mental disorder and should avoid being drawn outside this

The role of the psychiatrist remit in their professional role. Psychiatrists are properly occupied in the business of diagnosing and treating significant psychiatric disorders. As gate keepers to mental health resources, there are often pressures to validate distress or medicalize normal experience. Saying someone does not satisfy the criteria for a specific mental disorder does not mean that they do not have significant problems; rather, the problems do not fall within the scope of psychiatry and would be best dealt with by help or advice elsewhere. Good mental health is more than simply the absence of mental disorder; it requires:

- A sense of self-sufficiency, self-esteem, and self-worth.
- The ability to put one's trust in others.
- The ability to give and receive friendship, affection, and love.
- The ability to form enduring emotional attachments.
- The ability to experience deep emotions.
- The ability to forgive others and oneself.
- The ability to examine oneself and consider change.
- The ability to learn from experience.
- The ability to tolerate uncertainty and take risks.
- The ability to engage in reverie and fantasy.

Table 1.2 The rights and duties of patients and doctors

Patient	Doctor
Rights	Exemption from blame
To be considered an expert	Exemption from normal duties while in the sick role
To have privileged access to patient information and person	To expect the doctor to act in their best interests
To direct (and sometimes insist on) a course of action	To validate the sick role
Duties	To seek help
To act in the patient's best interests	To be open and honest
To maintain confidentiality	To comply with treatment
To keep up-to-date	To give up the sick role once well
To act, where possible, in society's interests	

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Diagnosis in psychiatry

Labels

People prefer to be seen as individuals, rather than members of a class: 'I'm a person, not a label'. This desire to recognize uniqueness is a part of the public reaction against race-, class-, and gender-related value judgements. Doctors, on the other hand, seem to love labels and classification and, in their enthusiasm, can appear like the Victorian butterfly collector who is only able to deal with life when it is named, categorized, and safely inert behind glass. Medical labels are based on characteristic combinations of symptoms and signs, but patient and doctor view these differently. Symptoms are important to patients because of their individual nature; this strange and atypical thing is happening to them. Symptoms are important to doctors because they indicate diagnosis and are features which make this patient similar to others we have seen or about whom we read.

Diagnosis

The naming of a thing is the first step towards understanding it. We seek to identify disorders (diagnosis) in order to be able to suggest treatments (management) and predict their course (prognosis). Ultimately, the aim is to identify the physical abnormality (pathology) and the cause of the disease (aetiology) and so develop means of prevention and cure. The ideal diagnostic system labels diseases according to aetiology. The aetiology of most mental disorders is unknown, and so we tend towards a diagnostic system based upon common clinical features, shared natural history, common treatment response, or a combination of all three. Diagnosis leads to the consideration of individual diseases as members of groups contained within a hierarchy—a form of classification system. Why make a diagnosis? Why allocate the patient, with his individual and unique history, experience, and range of signs to a single label, with the inevitable compromises and loss of information this entails? Diagnosis must be justified on a general and an individual basis. Generally, the process of establishing a diagnosis is essential to allow succinct communication with colleagues, to help predict prognosis, and to carry out valid research on pathological mechanisms and treatments. Remember, however, that allocation of a patient to a diagnostic category can only be justified if it will bring them benefit, not harm.

Classification in psychiatry

Over the past century, within psychiatry, there has been a debate about the value and method of psychiatric classification. On one hand, academic and biological psychiatrists worried that psychiatric diagnosis was insufficiently reliable and valid, with terms being used in imprecise or idiosyncratic ways; on the other hand, psychodynamic practitioners emphasized the importance of unique patient factors and the degree of detail lost by reductionism in diagnostic methods. The first concern was tackled by developing operational criteria—clearly defined clinical descriptions of the disorders, together with explicit inclusion and exclusion criteria and details of the number and duration of symptoms required for diagnosis. The second concern was met by multi-axial diagnosis where, in addition to the primary mental disorder coded on axis-I, additional axes code the patient's psychosocial problems, personality factors, medical health, and degree of disability (see Box 1.2).

Diagnosis in psychiatry

Box 1.2 International classification

The International Classification of Diseases (ICD-10)

(E The ICD-10 multi-axial system, p. 1118)

Published in 1992 by the WHO, the ICD-10 is a general medical classification system intended for worldwide multi-specialty use. It includes 21 chapters, identified by a roman numeral and a letter. Psychiatric disorders are described in Chapter V and are identified by the letter F. An index of the disorders described in this book, together with their ICD-10 coding, is given on E pp. 1088–1116.

Coding

Disorders are identified using an open alpha-numeric system in the form Fxx.xx. The letter 'F' identifies the disorder as a mental or behavioural disorder; the first digit refers to the broad diagnostic grouping (e.g. psychotic, organic, substance-induced), and the second digit refers to the individual diagnosis. The digits that follow the decimal point code for additional information specific to the disorder, e.g.

subtype, course, or type of symptoms. When used as second or third digits, '8' codes for 'other' disorders, while '9' codes for 'unspecified'. Versions Four versions of the ICD-10 classification of mental disorders exist, suitable for different purposes. ICD-10: Clinical descriptions and diagnostic guidelines ('the blue book') is used by psychiatric practitioners and gives clinical descriptions of each disorder, together with the diagnostic criteria. ICD-10: Diagnostic criteria for research ('the green book') contains more restrictive and clearly defined clinical features with explicit inclusion, exclusion, and time course criteria and is suitable for identification of homogenous patient groups for research purposes. The primary care version focuses on disorders prevalent in primary care settings and contains broad clinical descriptions, diagnostic flow charts, and treatment recommendations. A short glossary containing the coding and brief descriptions can be used as a quick reference by practitioners and administrative and secretarial staff. Axial diagnosis The multi-axial version of ICD-10 uses three axes to broaden the assessment of the patient's condition. Axis 1 describes the mental disorder (including personality disorder and mental handicap), Axis 2 the degree of disability, and Axis 3 current psychosocial problems. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) In May 2013, the APA launched the most recent version of the DSM. While ICD-10 is a wider general medical classification, DSM-5 describes only mental disorders. The two classifications are broadly similar, having undergone a degree of convergence and cross-fertilization in more recent revisions. Relevant DSM-5 terminology and old DSM-IV codes corresponding to ICD-10 disorders are given on E pp. 1088–1116. DSM-IV used a closed numeric coding system of the form xxx.xx (mostly in the range 290–333.xx). DSM-IV was a multi-axial diagnostic system, using five axes: 1—the clinical disorder or the current clinical problem; 2—any personality disorder and any mental handicap; 3—general medical conditions; 4—current psychosocial problems; and 5—global assessment of functioning. This multi-axial approach has been abandoned in DSM-5 (E DSM-5 and all that . . . , p. 12).

12 Chapter 1 Thinking about psychiatry DSM-5 and all that . . . 'The strongest system currently available for classifying disorders.' David Kupfer, Chair of DSM-5 Task Force, May 3, 2013 'Patients with mental disorders deserve better.' Thomas Insel, Director NIMH, Apr 24, 2013 After nearly 10yrs, a series of white papers, 13 scientific conferences, with 400 contributors to monographs and peer-reviewed journal articles, Diagnostic and Statistical Manual, fifth edition (DSM-5) Task Force and Work Groups comprising >160 world-renowned clinicians and researchers, oversight by Scientific Review and Clinical and Public Health Committees, and an estimated cost of \$20–25 million, the DSM-5 was officially launched at the American Psychiatric Association (APA)'s Annual Meeting in San Francisco in May 2013. But was it worth it? Concerns over dramatic changes proved premature, and many of the more contentious proposals were consigned to 'Section III' where 'emerging measures and models' are to be found, including: assessment measures, guidance on cultural formulation, an alternative model for diagnosing personality disorders (a hybrid dimensional-categorical model), and conditions for further study (see Box 1.3). The final product involved mostly modest alterations of the previous edition, based on new insights emerging from research since 1990 when Diagnostic and Statistical Manual, fourth edition (DSM-IV) was published. There are some changes, e.g. the multi-axial system has gone (E The ICD-10 multi-axial system, p. 1118), schizophrenia subtypes have been replaced by a dimensional approach to rate symptom severity (found in Section III), and some new chapters have been added to allow disorders with similar underlying vulnerabilities or symptom characteristics to go together [e.g. obsessive-compulsive disorder (OCD) and related disorders; trauma- and stressor-related disorders; disruptive, impulse-control, and conduct disorders]. There are some new categories [e.g. mood

dysregulation disorder (E Bipolar disorder in children and adolescents, p. 700); hoarding disorder (E Hoarding disorder (DSM-5), p. 389], and some previous categories Box 1.3 Conditions for further study • Attenuated psychosis syndrome. • Depressive episodes with short-duration hypomania. • Persistent complex bereavement disorder. • Caffeine use disorder. • Internet gaming disorder. • Neurobehavioural disorder due to prenatal alcohol exposure (ND-PAE). • Suicidal behaviour disorder. • Non-suicidal self-injury.

DSM-5 and all that . . . have been dropped [e.g. Asperger's syndrome (E Asperger's syndrome, p. 820)] and/or reorganized along a continuum [e.g. substance use disorder (E Box 14.2, p. 570), autism spectrum disorder (E Autism spectrum disorders, p. 674)]. Disorders may now be framed in the context of age, gender, cultural expectations, and developmental lifespan.³ APA's goal in developing DSM-5 was to create an evidence-based manual that was useful to clinicians in helping them accurately diagnose mental disorders and that reflected the scientific advances in research underlying those disorders. While DSM-5 is reliable in that it does provide a common language for describing psychopathology, it does little to advance the validity of the disorders described. Even in the APA press release, David Kupfer comments: 'We've been telling patients for several decades that we are waiting for biomarkers. We're still waiting.' One unexpected consequence of the whole DSM-5 endeavour has been to lead prominent scientists in the field to question the whole approach and try to devise something better. Efforts like the National Institute of Mental Health's Research Domain Criteria (RDoC) project⁴ aim to do just that, by using biological (genetic, imaging, physiological), cognitive, and social information to build more precise classifiers for each patient and develop rational treatments. In the meantime, rather than throwing the baby out with the bathwater, psychiatrists and other mental health professionals will continue to rely upon categorical diagnoses, as prescribed by DSM-5 and International Classification of Diseases, tenth revision (ICD-10), despite understanding the real limitations of such systems. With the impending release of International Classification of Diseases, eleventh revision (ICD-11) (latest estimate, some time in 2018), it is hoped that there will at least be structural harmonization of these two classification systems. DSM-5's organization was actually designed to reflect the anticipated structure of ICD-11, and the diagnoses are listed with both ICD-9-CM* and the ICD-10-CM* codes (not distinct DSM-5 codes). In fact, as of October 2014, the official coding system in use in the United States, for insurance purposes, is ICD-10-CM. While the promise of the science of mental disorders is great, it is clinical experience and evidence, as well as growing empirical research, which should guide us in the present. In the future, our hope must be to diagnose disorders using precise biological and genetic markers delivered with complete reliability and validity. 'At the end of the 19th century, it was logical to use a simple diagnostic approach that offered reasonable prognostic validity. At the beginning of the 21st century, we must set our sights higher.'⁵ ³ For more information, see <http://www.dsm5.org> ⁴ National Institute of Mental Health. Research Domain Criteria (RDoC). <https://www.nimh.nih.gov/research-priorities/rdoc/index.shtml> [accessed 31 December 2018].

- ICD-9-CM and ICD-10-CM denote the American adapted 'clinical modification', versions of the ninth and tenth revisions of the ICD. ⁵ Craddock N, Owen MJ (2010) The Kraepelinian dichotomy – going, going . . . but still not gone. *Br J Psychiatry* 196:92–5.

14 Chapter 1 Thinking about psychiatry Why do psychiatrists not look at the brain? Psychiatrists, with the exception of those doing academic research projects, are the only medical specialists who

rarely directly examine the organ they treat. The chances that a patient with a serious psychiatric disorder (e.g. schizophrenia, bipolar disorder, severe depression) has ever had a brain scan are fairly slim. Psychiatrists prescribe antipsychotics, antidepressants, mood stabilizers, electroconvulsive therapy (ECT)—all of which have a major impact on brain function—but do not know beforehand which areas of the brain are working well and which are not functioning properly. Why is this? As a medical student, a medical practitioner, or even as a trainee psychiatrist, this situation does seem somewhat at odds with the medical training we receive. Imagine the outcry if an orthopaedic surgeon were to set fractures without first taking an X-ray, or a cardiologist diagnosing coronary artery disease without an electrocardiogram (ECG), angiography, or computed tomography (CT). Imagine if, based on your description of the problem, a car mechanic replaced the radiator in your car (at great expense to you) without even bothering to look under the bonnet first. How can it be that the state of the art in psychiatry is not to look at the brain? Looking at this issue another way, it is perhaps not surprising. If I were a patient who presented to a psychiatrist with a catalogue of recent losses (including both my parents and a recent redundancy), low mood, sleep problems, loss of appetite, and a feeling of general hopelessness about the future, I would probably be somewhat perturbed if my psychiatrist declared that they could not help me until they had taken half an armful of blood, performed a painful lumbar puncture (LP), and arranged a magnetic resonance imaging (MRI)/single-photon emission computed tomography (SPECT) scan of my brain (which might take a few months). I might be impressed at their thoroughness, but over the following weeks, as I fretted even more about the results of my brain scan, I might contemplate the wisdom of approaching someone who just seems to have added to my worries. When the final results came in and the psychiatrist declared that I was suffering from depression, I might seriously question their abilities, when I could have told them that 3mths ago! In the main, psychiatrists base diagnosis and treatment on symptom clusters, not brain imaging or other investigations. This is not to say that it is not good clinical practice to perform a physical examination and some routine blood tests [or even an electroencephalograph (EEG) or CT/MRI when indicated by the history or clinical signs]. Rather, these are generally investigations of exclusion (sometimes a negative result can be useful—a point that is often lost on other clinicians when psychiatrists do request investigations which are reported as 'normal'). Psychiatric disorders (with the exception of organic brain disorders, e.g. dementia) are predominantly disorders of brain function; there are rarely observable changes in brain structure which would aid diagnosis. At present, there are no gold standard diagnostic tests for psychiatric disorders. This is not to say that, in the future, functional imaging of the brain might not play a role in psychiatric diagnosis, but at

Why do psychiatrists not look at the brain? present [and despite the fact that high-resolution SPECT and positron emission tomography (PET) scans of the brain have been available for more than 20yrs), it is not yet time to use these imaging tools in routine psychiatric practice. More research is needed to determine the specificity and sensitivity of these imaging tools, even though there are hundreds of articles on functional brain imaging in a variety of psychiatric disorders (as a Medline search will quickly reveal). Does this relegate psychiatry to the lower divisions of medical specialties? No. Rather, the doctor practising in psychiatry needs a firm grounding in general medicine (to recognize when a condition may have an organic basis), sharply honed interviewing skills (to elicit important psychiatric symptoms), a firm grasp of psychopharmacology (to differentiate between symptoms of disease and drug-related problems), and an appreciation of the psychosocial problems that may affect an individual in the society in which they live. Psychiatry is

not about medicalizing normal experience; it is the ability to recognize symptoms of disease, as they are manifest in abnormalities of emotion, cognition, and behaviour. Psychopathology reveals as much to a trained psychiatrist as pathology does to his medical or surgical colleagues. Psychiatrists may not (yet) examine the brain directly, but they are certainly concerned with the functioning of the brain in health and disease.

16 Chapter 1 Thinking about psychiatry Can psychotherapy change the brain? Descartes' error is never more apparent than when confronted with explanations of how exactly the psychotherapies bring about often profound changes in a patient's beliefs, ways of thinking, affective states, or behaviour. If we are ever to bridge the mind-brain divide, then a neurobiological understanding of the mechanisms by which the psychotherapies exert their actions is vital. This would not only provide a sound theoretical foundation for these treatment approaches, but also aid the improvement of psychotherapeutic interventions by opening up the possibility of objectively measuring potential benefits and comparing one approach with another. Psychotherapy has been beset with accusations of being non-scientific. Even Freud had the good sense to abandon his Project for a Scientific Psychology, which he started in 1895. He just did not have the tools he needed to detect functional changes in the living brain. However, Freud's early experiments with cocaine—mainly on himself—convinced him that his putative libido must have a specific neurochemical foundation. Now that we do have the ability to reliably detect training- and learning-related changes in brain activation patterns using non-invasive functional imaging,⁶ Freud's unfinished Project may be finally realizable. Research in this area is never likely to attract the funding that major drug companies can invest in neurobiological research. Nevertheless, evidence is emerging for alterations in brain metabolism or blood flow that relate to therapeutic effects. A recent review article⁷ identified a number of studies assessing the effects of cognitive behavioural therapy (CBT) in OCD and phobic disorders and of CBT and interpersonal therapy in depression. In OCD, psychological intervention leads to reduced metabolism in the caudate and a decreased correlation of the right orbitofrontal cortex with the ipsilateral caudate and thalamus. Interestingly, similar changes are observed in OCD treatment with fluoxetine, suggesting common or at least converging mechanisms in the therapeutic benefits of psycho- and pharmacotherapies. In phobia, the most consistent effect of CBT is reduced activation in limbic and paralimbic areas. Reducing amygdala activation appears to be a common final pathway for both psycho- and pharmacotherapy of phobic disorders. Whether different functional networks are responsible for this common end point remains to be determined, although animal research does suggest this may well be the case. Studies of depression are more difficult to interpret, showing both increases and decreases in prefrontal metabolism associated with successful treatment. It does appear that depression is a much more heterogeneous disorder, and the functional networks implicated in the treatment effects of the different therapies are not as straightforward as for anxiety disorders. Future studies need to address issues including larger patient numbers, use of standardized imaging protocols, and utilization of molecular markers. 6 Linden DEJ (2003) Cerebral mechanisms of learning revealed by functional neuroimaging in humans. In: Kühn R, Menzel R, Menzel W, Ratsch U, Richter MM, Stamatescu I-O (eds). *Adaptivity and Learning: An Interdisciplinary Debate*, pp. 49–57. Heidelberg: Springer. 7 Linden DEJ (2006) How psychotherapy changes the brain—the contribution of functional imaging. *Mol Psychiat* 11:528–38.

Can psychotherapy change the brain? However, it is clear that modulation of brain activity through psychotherapeutic interventions not only occurs, but also may explain the benefits that patients

experience. It may be time to put old prejudices aside and properly study alternative non-pharmacological interventions. As the neurobiologist Jaak Panksepp has said, modern research into the aetiology of disorders of emotion and behaviour 'is not a matter of proving Freud right or wrong, but of finishing the job'.

18 Chapter 1 Thinking about psychiatry The power of placebo 'The passions of the mind [have a wonderful and powerful influence] upon the state and disorder of the body.' Haygarth (1801) 'Placebo' from Latin 'placare', 'to please', entered the medical lexicon in Hooper's Medical Dictionary in 1811 as 'an epithet given to any medicine adopted to please rather than benefit the patient'. However, the modern study of the 'placebo effect' began when the anaesthetist Henry K Beecher described patient responses to oral analgesics in 1953 and later discussed 'the powerful placebo' in the often quoted JAMA article of 1955.⁸ In these largely uncontrolled studies, he found that around 30% of the clinical effect could be attributed to the effect of placebo. Over 50yrs later, research has generated many theories of how placebos may exert their effects (see Box 1.4), but it still remains a controversial area. For psychiatry, understanding the reality of the placebo effect is critical when it comes to examining the evidence for (and against) interventions. A good example is the recent controversy that 'antidepressants are no better than a sugar pill'. This statement conceals an assumption that giving placebo ('sugar pills') is the same as no treatment at all. This could not be further from the truth, and in mild to moderate depression, placebo exerts a powerful effect. Nobody is likely to run the headline 'Psychiatrists agree antidepressants should not be the first-line treatment for mild to moderate depression'. In fact, clear separation of antidepressant medication benefit from placebo is only seen for moderately severe depression, as defined by the Hamilton Depression Rating Scale (i.e. scores of 25+).⁹ Another telling illustration of the power of placebo in psychiatry is Johnstone et al.'s¹⁰ ECT trial comparing sham-ECT (anaesthesia plus paralysis) to active treatment. It is no surprise that placebo treatment with sham-ECT was very effective, reducing Hamilton Depression scores by around 50%. The real result was that ECT was superior to sham-ECT, but only for psychotic depression (i.e. clinically much more severe). Should we be surprised that placebos can exert such powerful effects? Research on pain¹¹ (see Box 1.4) suggests that humans and other animals have neurobiological systems that evolved to utilize activation through cognitive mechanisms (e.g. expectation, preconditioning, and contextual-related assessment) that can induce physiological change. (Imagine the physical effects of exam nerves.) This certainly presents a challenge when designing randomized controlled trials (RCTs) and interpreting the efficacy.

8 Beecher HK (1955) The powerful placebo. JAMA 159:1602-6. M <http://www.ncbi.nlm.nih.gov/pubmed/13271123>

9 Fournier JC, DeRubeis RJ, Hollon SD, et al. (2010) Antidepressant drug effects and depression severity: a patient meta-level analysis. JAMA 303:47-53. M <http://jama.ama-assn.org/cgi/content/full/303/1/47>.

10 Johnstone EC, Deakin JF, Lawler P, et al. (1980) The Northwick park electroconvulsive therapy trial. Lancet 2:1317-20.

11 Zubieta JK, Stohler CS (2009) Neurobiological mechanisms of placebo responses. Ann N Y Acad Sci 1156:198-210.

The power of placebo of active treatments, but it also offers the potential of invoking these resiliency mechanisms to effectively aid in recovery from injury, infection, distress, and functional impairment. The potency of such techniques has been well known to practitioners of traditional medicine for millennia. This is not to suggest we should pipe in soothing music, don Mesmeresque purple robes, and mutter incantations in Latin. Rather, we ought to be circumspect in how we interpret and present the evidence for the treatments we recommend to our patients. We also

ought to be aware that our attitude towards the patient and the setting in which they are seen will affect the real benefits of any intervention.

Box 1.4 Proposed mechanisms for the placebo effect

- **Natural remission** Improvement would have occurred anyway due to the nature of the condition.
- **Regression to the mean** If a measurement is outwith normal parameters, later testing is more likely to be closer to the mean than to be more extreme.
- **Anxiety reduction** Alleviation of anxiety following a therapeutic encounter leads to diminution of symptoms, particularly when they are painful or emotionally distressing.
- **Expectations** Cognitive factors—past influences: direct experience (of the intervention, practitioner, and setting), experience of others' accounts, media influences, and cultural factors; and current influences: logic, verbal information, non-verbal cues, attitude (towards the intervention, practitioner, and setting), perception of the practitioner (attitude, personality, temperament, experience), and knowledge.
- **Transference** Psychoanalytical theory would suggest placebo works due to the unconscious projection of feelings, attitudes, and wishes, initially formed towards a significant figure early in development, onto another person such as the doctor, e.g. the patient's response may be a simulacrum of the child's need to please the parent.
- **Meaning effects** Whereas 'expectations' are generally explicit and accessible, sometimes the meaning or context of an interaction may be more complex and not directly expressible. Researchers separate microcontext (setting or physical environment) from macrocontext (wider culture pertaining to the practitioner, patient, and setting).
- **Conditioning** Previous exposure to active treatment engages learnt response mechanisms when followed by placebo. Conditioning processes help explain 'expectations' and 'meaning effects', but there are also circumstances when conditioning operates on physiological responses (e.g. heart rate, blood pressure, hormone excretion, immune response) without explicit expectation or even conscious awareness of the response occurring.
- **Neurobiology** Functional brain imaging studies of pain implicate a distributed network (anterior cingulate, periaqueductal grey, dorsolateral prefrontal cortex, orbitofrontal cortex, insula, nucleus accumbens, amygdala, and medial thalamus), modulated by both opioid and dopamine neurotransmission in elements of the placebo effect, e.g. subjective value, expectations over time, affective state, and subjective qualities of pain.

20 Chapter 1 Thinking about psychiatry

Treating patients against their will

Psychiatric patients may have treatment, hospitalization, and other measures imposed on them against their wishes. The power to impose such measures does not sit comfortably with the usual doctor-patient relationship, and psychiatrists may find 'sectioning' patients unpleasant. The existence of these powers means that, under some circumstances, psychiatrists will be damned if they do (criticized for being agents of social control, disregarding a person's autonomy, and being heavy-handed) and damned if they don't (neglecting their duties, not giving patients the necessary care, and putting the public at risk). Although it may not seem so, sectioning a patient may, in fact, be a very caring thing to do—akin to lifting and holding a 2-yr-old having a tantrum and at risk of hurting themselves and then soothing them. Such a (literally) paternalistic view may appall some people, but historically, paternalism has had a major influence in this area. When we consider why it is that we have such powers, we might argue that because psychiatric illness may affect insight and judgement (i.e. a person's capacity), sometimes patients might not be capable of making appropriate decisions about their care and treatment. Although, to modern ears, this may sound ethically sensible, we have had mental health legislation for over 200yrs, and it is only recently that explicit consideration of such matters has influenced mental health legislation. Mental health legislation has its origins in eighteenth-century laws, allowing for the confinement of 'lunatics' and the regulation of private mad houses. The main concerns at that time were the proper care of

lunatics, fear of lunatics wandering free, and paternalistic sentiments that lunatics as a group did not know what was best for them and so others should determine this. Large county asylums were built in the nineteenth century and became the old mental hospitals of the twentieth century. Until 1930, all patients were detained; there was no such thing as a voluntary or informal patient. If you were insane, your relatives (if you were rich) or the poor law-receiving officer (if you were poor) would apply to a justice of the peace with the necessary medical certification, and you would be confined to an asylum—because this was deemed to be the best place for you. Our current legislation has its ancestral roots in such procedures—reform has rarely led to redrafting from scratch; vestiges of old laws are passed on through centuries. Another question often raised is why we should deal with psychiatric illnesses any differently from physical illnesses? After all, physicians cannot detain their patients in order to manage their medical problems, can they? Interestingly, in certain circumstances, they can. Although it is unusual, under Sections 37 and 38 of the Public Health Act, the compulsory detention of patients with infectious tuberculosis of the respiratory tract is allowed—however, the patient cannot be treated against their wishes. Patients with a physical illness can only be treated against their wishes if they lack capacity (which may be due to a psychiatric disorder). Is it right that psychiatric patients can be treated against their wishes, even when they have capacity to make such decisions? In the twenty-first century, paternalism is dead and autonomy rules. A patient with motor neuron

Treating patients against their will disease is allowed to have their life support machine turned off, despite the wishes of their doctors—why not the same right for psychiatric patients? This does seem to raise interesting ethical questions about whether interventions can ever be justified by principles of paternalism or public protection, when a mentally disordered person has capacity. A pertinent example is that of a currently well patient with a diagnosis of bipolar disorder who wishes to stop their mood stabilizer, despite past episodes of dangerous driving when unwell. Let's return to the public health argument of public protection. Infectious patients with tuberculosis may pose a risk to others, and some psychiatric patients may also pose a risk to others. However, most people with a mental disorder (even severe cases) are never violent; violence is difficult to predict, and many other people who pose a public risk (those who drink heavily or drive fast) are not subject to such special measures. Potentially dangerous behaviour is not in itself a justification for the existence of mental health legislation but instead provides one criterion for the use of such measures when a person meets other criteria (namely having a mental disorder) and needs care and treatment. We need to be very wary of how our special powers to detain and treat patients against their wishes might be extended and misused. It is not the role of psychiatric services (including forensic psychiatric services) to detain dangerous violent offenders and sex offenders just to prevent them from re-offending. That is not to argue that psychiatrists should not have a role in the assessment and management of such individuals—just that we should not have primary responsibility for their care. In the twenty-first century, we should be clear about our role—to care for individuals with psychiatric illnesses, without necessarily being paternalistic. We should treat our patients in such a way as to prevent harm to them and to others, but this should not be our *raison d'être*. The primary justification for the existence of mental health legislation should be to ensure the provision of care and treatment for people who, because of mental disorder, have impaired ability to make appropriate decisions for themselves. We should not be able to forcibly intervene unless this is the case and, when we do, our interventions should be for their benefit.

22 Chapter 1 Thinking about psychiatry Perceptions of psychiatry Since the beginning of recorded history, the public imagination has been fascinated and provoked by the mentally afflicted. Of equal interest have been the social and political responses to mental illness and the mechanisms that have emerged to manage and control the 'mad' among us. In general, public perceptions have tended towards polar extremes—on the one hand, fear, ignorance, ridicule, and revulsion; on the other, idealization, romanticism, and a voyeuristic curiosity. The social constructions of madness throughout history have coloured both lay and professional notions of mental illness and its treatment in the present age. These varying perceptions are represented in the arts, the media, and the political discourse of our societies. In the ancient world, mental illness came from the Gods. Nebuchadnezzar's delusions, the senseless violence of Homer's Ajax, and the suicidal depression of Saul were the result of angry or meddling deities and 'furies'. In Deuteronomy (vi: 5), it is written: 'The Lord will smite thee with madness.' The first to situate mental suffering within the brain were the sages of the classic world: Hippocrates, Aristotle, and Galen. However, the dark age of medieval Europe saw a return to magical and spiritual interpretations of mental disturbance—madness was the work of demonic forces and witchcraft. Thus, Joan of Arc and countless others were burnt at the stake or drowned for their sins. With the dawn of the Enlightenment, Cartesian notions of rationality and a mind that resided separate from the body displaced the supernatural and laid a foundation for modern concepts of mental illness. Insanity represented 'the flight of reason', and religious moralism gave way to scientific moralism—instead of being one possessed, the unfortunate sufferer was now a 'degenerate'. The Romantic era provided a foil to the empiricist veneration of reason. Byron, Blake, Rousseau, Shelley—these were the figures that epitomized in the public mind the archetypal union of madness and genius. 'Great wits are sure to madness near allied; and thin partitions do their bounds divide', wrote Dryden, while in a seventeenth-century etching, Melancolicus proclaims: 'the price of wisdom is melancholy'. The age of asylums and shackles (portrayed by Hogarth in his series depicting 'The Rake's Progress' through Bedlam and condemned by Foucault as 'the great confinement') came to an end when, in the spirit of the French Revolution, Pinel struck off the chains from his charges. The beginning of the twentieth century witnessed Freud's description of the unconscious and the birth of medical psychiatry. It was to be a century of controversy and intense soul-searching, as psychiatry became equated in the public imagination with 'shock therapy', lobotomies, and the political abuses of Nazi and Soviet regimes. This provided fodder for Laing and Cooper and the anti-psychiatry movement (E Anti-psychiatry, pp. 28–29), while skirmishes continue to this day between psychoanalytic and biological paradigms. Finally, in the age of mass media, the actions of a handful of mentally ill stalkers and assassins, such as Hinckley (who shot President Reagan), Mark David Chapman (who killed John Lennon), and Tsafendas (who killed Verwoerd, the architect of apartheid), have kindled the public's image of the crazed killer into a blaze of prejudice and stigma.

Perceptions of psychiatry In the second decade of the third millennium, we are the inheritors of these historical constructs of mental illness. Our individual notions of madness and perceptions of psychiatry are derived, in part, from this varied bequest. Supernatural, romantic, biological, and psychological notions of madness abound, while the historic tensions between the belief that psychiatry is fundamentally benevolent and the conviction that it is inherently repressive continue into the present. The public mind is exposed to portrayals of madness and psychiatry in art, literature, film, and the media, and these are powerful influences in shaping individual and collective perceptions. There are many examples of our contrasting notions within popular art. For example, *The Crucible* illustrates the mentally afflicted as cursed and invokes witchcraft as the

agent of causation. By comparison, *Quills* and *The Madness of George III* portray the sick as mentally impaired, disordered, and degenerate (with differing degrees of historical accuracy). Similarly, in literature, *Don Quixote* and *King Lear* depict the anti-hero as simple or incomplete. The neurologist Oliver Sacks did much to counter this stereotype with his sympathetic portrayal of neuropsychiatric conundrums, e.g. in *Awakenings*. The mad genius archetype appears in *A Beautiful Mind*, *The Hours*, and *Shine*, while Joyce's 'Nighttown' chapter of *Ulysses* and Nietzsche's *Thus Spake Zarathustra* celebrate the gift of unfettered thought. Nietzsche defines madness as the 'eruption of arbitrariness in feeling, seeing and hearing, the enjoyment of the mind's lack of discipline, the joy in human unreason'.¹² In *Hannibal Lecter* (*Silence of the Lambs*), *Raskolnikov* (*Crime and Punishment*), and the villainous Hyde of *Dr Jekyll and Mr Hyde*, we see the stereotype of the crazed and dangerous killer. Finally, artistic critiques of psychiatry abound, but the champions surely include *One Flew Over the Cuckoo's Nest*, *The Snake Pit*, and Sylvia Plath's *The Bell Jar*. The challenge for us in this post-modern era is to consider our own constructs of what mental suffering means and to reflect upon how we should portray our psychiatric profession in society. In doing so, it is worth remembering the ideas we have inherited from our ancestors and how these ideas pervade current discourse. In sifting the grain from the chaff, we would do well to proceed cautiously—most ideas contain at least some grains of wisdom. ¹² Nietzsche F (1974) *The Gay Science*. Trans. Kaufman W. New York, NY: Vintage.

24 Chapter 1 Thinking about psychiatry Psychomythology 'Science must begin with myths and with the criticism of myths.' Sir Karl Popper (1963) *Myths matter*. Throughout history, myths have served the central function of explaining the inexplicable—creating the illusion of understanding. Human nature seems to defy explanation, and yet we constantly make value judgements of people and ourselves—inferring the motivation and causation on relatively little evidence—in an attempt to make sense of the world. Most of the time, erroneous beliefs matter little and may even be comforting, but some of the time, they can make us prejudicial or lead us to act unwisely. While it may be acceptable in our private lives to be more liberal with the truth, in our professional lives, we are afforded the benefits of authority, based upon our expertise. This is why there are professional examinations and qualifications. We must guard against misinformation and protect ourselves and our patients from treatments and explanatory models for which evidence is decidedly lacking. Pseudoscience Fortunately, we have the scientific method to help us sift the evidence (E Trust me, I'm an epidemiologist, p. 30) and the testable biopsychosocial model of aetiology of psychiatric illness (E Fig. 6.1, p. 256). Nevertheless, we can be fooled when a set of ideas is presented in a scientific way, even though it does not bear scrutiny. These pseudoscientific theories may be based upon authority, rather than empirical observation (e.g. old-school psychoanalysis, New Age psychotherapies, Thought Field Therapy), concern the unobservable (e.g. orgone energy, chi), confuse metaphysical with empirical claims (e.g. acupuncture, cellular memory, reiki, therapeutic touch, Ayurvedic medicine), or even maintain views that contradict known scientific laws (e.g. homeopathy). Some theories are even maintained by adherents, despite empirical testing clearly showing them to be false (e.g. astrology, biorhythms, ESP). Others cannot even be tested. As Carl Sagan pointed out in his excellent book *The Demon Haunted World: Science as a Candle in the Dark* (1995): 'any hypotheses should, at least in principle, be falsifiable. In fact the scientific method has this at its heart: the rejection of the null hypothesis. More worrying perhaps is the unthinking promotion of some of these methods by physicians who really should know better. Chi imbalance is not the same as serotonin dysregulation (no, really it isn't).' 'Men are from Mars, women are from Venus' Our culture is infused with popular myths about

psychology and psychiatry.¹³ From personality profiling to violence and mental illness, there is no end to confusion. The media lap up the newest theory, treatment, or 13 ‘ . . . and most popular psychology is from Uranus.’ When John Gray, author of *Men are from Mars, Women are from Venus*, appeared on Season 2, Episode 3 of Penn & Teller’s *Bullshit!*, Penn quipped ‘I guess the title “We’re all people and should be treated with love and respect” just wouldn’t fit on the book spine’.

Psychom mythology drug, even when the scientific evidence is shaky. Emotive anecdotes and stirring personal accounts lodge themselves into the public imagination. Modern Barnums promote their wares in bookshops and on the Internet and TV. Autism is on the rise, they say; hospital admissions go up during a full moon; people are more depressed at Christmas; antidepressants cause suicide; I can make you do X, Y, and Z; this is what your dreams really mean. There are many reasons why myths persist (see Box 1.5), and they are very difficult to challenge once they are established. This is one reason why psychoeducation is a vital component of most psychological therapies. Most people find that the antidote to the influence of pseudoscience on them is knowledge of real science. The twist in all of this is that understanding the truth of how the brain functions in health and disease is more remarkable, more amazing, and more life-changing than any fiction could ever be.

Box 1.5 Mythbusting The ten sources of error:

- Word of mouth If we hear something repeated enough times, we begin to believe it is true.
- Desire for easy answers and the quick fix If something sounds too good to be true, it probably is.
- Selective perception and memory We all suffer from naïve realism and believe that how we see the world is exactly how it is. We also have a tendency to remember hits and forget misses, which leads to illusory correlation—the mistaken perception that two statistically unrelated events are actually related.
- Inferring causation from correlation For example, although it may be true that a history of child sex abuse (CSA) is highly correlated with schizophrenia, it does not necessarily follow that schizophrenia is caused by CSA.
- Post hoc, ergo propter hoc reasoning (‘after this, therefore because of this’) Just because someone appears to get better after receiving a homeopathic remedy does not necessarily mean the remedy was effective.
- Exposure to a biased sample Psychiatrists usually see treatment-resistant patients and may assume treatment is less effective than it actually is for the majority of patients.
- Reasoning by representativeness Just because two things appear similar does not make them the same.
- Misleading film and media portrayals ECT perceptions have never recovered from *One Flew Over the Cuckoo’s Nest*.
- Exaggeration of a kernel of truth.
- Terminology confusion The etymology of words like ‘schizophrenia’ can lead to confusion, with most people believing it means patients have multiple personalities.

Adapted from the Introduction of Lilienfeld SO, Lynn SJ, Ruscio J, Beyerstein BL (2010) *50 Great myths of popular psychology*. Oxford: Wiley-Blackwell.

26 Chapter 1 Thinking about psychiatry

Stigma

Stigma is a Greek word meaning ‘mark’ and originally referred to a sign branded onto criminals or traitors in order to identify them publicly. The plural stigmata, when used in medical settings, means a collection of symptoms and signs by which a particular disorder may be identified. In its wider, modern sense, stigma refers to the sense of collective disapproval and group of negative perceptions attached to particular people, trait, condition, or lifestyle. Stigmatization describes the process by which the characteristics of the group in question are identified and discriminated against. Stigmatization can be thought of as a three-stage process—first, the individual is marked out as different by his actions or appearance; second, society develops a series of beliefs about the affected individual; finally, society changes its behaviour towards these individuals in a way consistent with those beliefs, often to the detriment of the stigmatized individuals. Stigma can become self-reinforcing, as it can be

associated with avoidance of the stigmatized individuals, leaving no opportunity for society to confront and change its beliefs. Fear of the unknown, fear of contamination, and fear of death or the sight of death have led to diseases of all kinds being stigmatized throughout history. This is particularly true of infectious diseases, diseases causing disfigurement, and mental disorders. As infectious and disfiguring diseases have become both more treatable and better understood, sufferers from mental disorders have remained uniquely vulnerable to stigmatization. One marker of this has been the ease with which originally neutral, descriptive terms for mental disorders have taken on a pejorative and disparaging meaning: cretin, maniac, spastic, imbecile. All have been abandoned in an attempt to free affected individuals from the approbation the name had acquired. Unfortunately, stigmatization involves fundamental and widely held beliefs and is not usually amenable to simple cures such as changes of name of conditions or organizations. For the person affected by mental illness, the name of the condition and their abnormalities of experience and behaviour will mark them out as different and are the root cause of their distress. However, the wider societal beliefs, expressed as stigmatization, will add to the burden of morbidity and may, in themselves, prolong the condition. For example, the belief that depression is 'all in the mind' and could be resolved if the affected individual would only 'pull themselves together' may cause people to behave less sympathetically towards the sufferer, but it may also hinder the sufferer from seeking appropriate help. There is no simple answer to the problem of stigma. We can certainly learn from the increasingly successful approach to the problem of stigmatization which initially attached to those individuals suffering from human immunodeficiency virus (HIV) infection. Increased public awareness of the cause of the disease, its method of transmission, the plight of its sufferers, and its means of treatment appear to be associated with less, not more, stigmatization. The Royal College of Psychiatrists, with its 'Defeat Depression' campaign, has been active in this regard.

Stigma On an individual basis we can:

- Challenge our own prejudices. These may exist, particularly in connection with patients with personality disorder and patients with substance misuse problems.
- Avoid stigmatizing language. There is no place for forced political correctness in medicine, but we should consider whether calling an individual 'a schizophrenic' describes them as a single unfavourable characteristic, rather than as a person with an illness.
- Challenge the lack of knowledge within the profession. A surprising lack of knowledge of mental disorders is often seen in our colleagues in other specialties. This may be expressed in, for example, a lower aspiration for treatment in individuals with mental handicap or chronic psychotic illness.
- Be advocates for political change. Professional conservatism should not halt us from being at the forefront of moves to improve the autonomy of patients, their involvement in society, and their legal protection.

28 Chapter 1 Thinking about psychiatry Anti-psychiatry One view of medicine is that it is an applied science whose object of scientific curiosity is the understanding of the causes and processes of human illness and the study of methods of preventing or ameliorating them. In the scientific method, there are no absolute truths, only theories which fit the observed facts as they are currently known. All scientists must be open to the challenging of firmly established theories as new observations are made and new experiments reported. All psychiatrists should retain this healthy scientific scepticism and be prepared to question their beliefs about the causes and cures of mental illness. Developments (and hence improvements in patient care) come from improvement in observation methods and trials of new treatment modalities. A result of this may be the enforced abandonment of cherished beliefs and favoured treatments. Always remember

that insulin coma therapy¹⁴ was, at one time, believed to be an effective treatment for psychotic illnesses. While rigorous examination of the basic and clinical sciences of psychiatry is essential if the specialty is to progress, psychiatry as a medical specialty has, over the last 50yrs, been subject to a more fundamental criticism—that the empirical approach and the medical model are unsuited to the understanding of mental disorder and that they cause harm to the individuals they purport to treat. This basic belief, known as ‘anti-psychiatry’, has been expressed by a variety of individuals over the years, reaching a peak in the late 1960s. Although the central arguments of the anti-psychiatry movement have largely been discredited in the mainstream scientific literature, they have retained currency in some areas of the popular press, within some patient organizations, and in certain religious cults. They are presented here for historic interest and so that the sources for modern-day advocates of these ideas can be identified (see Box 1.6). Central anti-psychiatry beliefs

- The mind is not a bodily organ and so cannot be diseased.
- The scientific method cannot explain the subjective abnormalities of mental disorder, as no direct observation can take place.
- Mental disorder can best be explained by social, ethical, or political factors.
- The labelling of individuals as ‘ill’ is an artificial device used by society to maintain its stability in the face of challenges.
- Medication and hospitalization are harmful to the individual so treated.

The anti-psychiatry movement did raise some valid criticisms of then contemporary psychiatric practice—in particular, pointing out the negative effects of institutional living, criticizing stigma and labelling, and alerting psychiatrists to the potential use of political change in improving patient care. It was, however, fatally flawed by a rejection of empiricism, an over-reliance on single case reports, domination by a small number of personalities with incompatible and deeply held beliefs, and an association with half-baked political theory of the Marxist-Leninist strain.

Anti-psychiatry Box 1.6 Prominent anti-psychiatrists

- Szasz Rejected compulsory treatment. Author of *Pain and Pleasure* and *The Myth of Mental Illness*. Viewed disease as a bodily abnormality with an observable pathology to which, by its nature, the brain was immune. Saw mental illness as conflict between individuals and society. Rejected the insanity defence and committal to hospital. Accepted patients for voluntary treatment for drug-free analysis on payment of fee and acceptance of treatment contract.
- Scheff Worked in labelling theory. Wrote *Being Mentally Ill*. Hypothesized that mental illness was a form of social rule-breaking. Labelling such individuals as mentally ill would stabilize society by sanctioning such temporary deviance.
- Goffman Wrote *Asylums*. Described the ‘total institution’ observed as a result of an undercover study. Commented on the negative effects of institutions segregated from the rest of society and subject to different rules.
- Laing Author of *The Divided Self*, *Sanity, Madness and the Family* and *The Politics of Experience*. Developed probably the most complete anti-psychiatry theory. He saw the major mental illnesses as arising from early family experiences, in particular from hostile communication and the desire for ‘ontological security’. He saw newborns as housing potential which was diminished by the forced conformity of the family and the wider society. Viewed normality as forced conformity and illness as ‘the reality which we have lost touch with’.
- Cooper Revived anti-psychiatry ideas. A committed Marxist, he saw schizophrenia as a form of social repression.
- Buscaglia Wrote *The Deviant Majority*. Held that diagnosis did not aid understanding of the patient’s experience. Believed that social and economic factors were crucial. Successful in pressing for significant reform of the Italian mental health system.
- Scull Wrote *Museums of Madness*. Saw mental health systems as part of ‘the machinery of the capitalist system’.
- Breggin Modern advocate of anti-psychiatry views. Author of *Toxic Psychiatry* which views psychopharmacology as ‘disabling normal brain function’. Rejects results of systematic reviews.

¹⁴ In 1933, Manfred Sakel introduced insulin

coma therapy for the treatment of schizophrenia. This involved the induction of hypoglycaemic coma using insulin, the rationale being that a period of decreased neuronal activity would allow for nerve cell regeneration. In the absence of alternative treatments, this was enthusiastically adopted by practitioners worldwide. However, with the advent of antipsychotics in the 1950s and the emergence of RCTs, it became clear that the treatment had no effect above placebo and it was subsequently abandoned.

30 Chapter 1 Thinking about psychiatry Trust me, I'm an epidemiologist 'I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous.' Hippocrates Evidence-based medicine (EBM), defined by David Sackett as 'the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients',¹⁵ has become so embedded in medical curricula and principles of critical appraisal so widespread within the educational and academic establishment that any twenty-first-century graduate might be surprised that EBM has a relatively short history. The modern concept of EBM emerged out of a general disquiet with traditional approaches to medical decision-making ('the art of medicine'), highlighted in 1967 by Alvan Feinstein's book *Clinical Judgment*. Archie Cochrane's *Effectiveness and Efficiency*, published in 1972, showed a clear lack of controlled trials to support many supposedly effective treatments, and throughout the 1970s and 1980s, the wide variations in clinical practice, gaps in the evidence, and common errors in clinical reasoning were documented by John Wennberg and David M Eddy. This led Alvan Feinstein, David Sackett, and others working in clinical epidemiology to develop and standardize methods to improve clinical decision-making—disseminated to a wide medical audience through 25 *Users' Guides to the Medical Literature* published in JAMA from 1993 to 2000 by the Evidence-based Medicine Working Group at McMaster University. In the United Kingdom (UK), the Cochrane Centre in Oxford was established in 1992 as part of the information systems strategy developed to support the National Health Service (NHS) Research and Development Programme. The international Cochrane Collaboration followed in 1993, creating a network of 13 countries to produce systematic reviews and guidelines, and in 1999, the National Institute for Clinical Excellence (NICE) was created to systematically search for, and classify, evidence and to make recommendations for good clinical practice, based on the strength of that available evidence. In the last 20yrs, three streams of evidence dissemination developed: (1) systematic reviews and meta-analyses were widely published in the medical literature and online (e.g. <http://www.cochrane.org>); (2) knowledge search engines (e.g. Google Scholar and Medline interfaces such as Ovid and PubMed) became ubiquitous tools for medical literature searching; and (3) knowledge distillation services compiled and disseminated concise reviews of evidence and links to published guidelines (e.g. NICE) on specific topics or questions (e.g. BMJ Clinical Evidence, InfoPoems). There have also been significant efforts to provide 15 Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS (1996) Evidence-based medicine: what it is and what it isn't [editorial]. BMJ 312:71-2.

Trust me, I'm an epidemiologist appropriate guidance for clinicians seeking to understand the quality of evidence behind published recommendations and guidelines. The most recent comprehensive approach is GRADE¹⁶ which has become the gold standard used by the World Health Organization (WHO), Cochrane Collaboration, NICE, Scottish Intercollegiate Guidelines Network (SIGN), BMJ Clinical Evidence, UpToDate, and many more organizations worldwide. In the UK, psychiatry has been at the forefront of this EBM revolution. The Centre for Evidence-Based

Mental Health was founded in Oxford in 1988 and still promotes and supports the teaching and practice of EBM (M <http://www.cebmh.com>). In collaboration with the British Psychological Society and the BMJ, the Royal College of Psychiatrists launched the Evidence-Based Mental Health journal (M <http://ebmh.bmj.com>) in 1998, with the stated intent of harnessing ‘recent advances in clinical epidemiology, biostatistics, and information science to produce a coherent and comprehensive approach to allow clinicians to base their practice on the best available evidence.’¹⁷ The College also introduced a Critical Appraisal paper to the MRCPsych examination in 1999 and the most recent examination format retains Evidence-Based Practice multiple choice questions (MCQs) and extended matching items (EMIs) in Paper B.¹⁸ There is a clear expectation that the modern psychiatrist should be competent in formulating answerable questions, finding relevant evidence quickly, appraising that evidence, and then applying it to their practice. In this digital age of information and communication technologies, answers to clinical questions are literally at our fingertips. While it is true that EBM has significantly contributed to the scientific development of medical literature in the past two decades, modern commentators caution of its ‘considerable limitations, overall reductionism, insufficient consideration of problems related to financial conflicts of interest, disregard of the patient–physician relationship (including patient’s preferences) and the need for integration with clinical judgment.’¹⁹ As early as 1995, Alvan Feinstein, then aged 70, anticipated this when he wrote: ‘the glaring handwriting on the wall is that randomized trials will be impossible—logistically, ethically, and fiscally—for investigating all the cause–effect relationships . . . what we have learned from the trials offers splendid guidance for principles and criteria that can improve science in observational studies. The outstanding need for the immediate future is to develop those principles and criteria.’²⁰

16 Guyatt GH, Oxman AD, Vist GE, et al. (2008) GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. *BMJ* 336:924–6. M <http://www.gradeworkinggroup.org/> 17 Geddes J, Reynolds S, Streiner D, et al. (1998) Evidence-based practice in mental health. *Evid Based Mental Health* 1:4–5. 18 Royal College of Psychiatrists. Preparing for exams. M <https://www.rcpsych.ac.uk/training/exams/preparing-for-exams> [accessed 31 December 2019]. 19 Fava GA (2013) Clinical judgment in psychiatry. Requiem or reveille? *Nord J Psychiatry* 67:1, 1–10. 20 Feinstein AR (1995) Meta-analysis: statistical alchemy for the 21st century. *J Clin Epidemiol* 48:71–9.

32 Chapter 1 Thinking about psychiatry It has become increasingly clear that clinical experience and judgement are necessary to individualize treatment plans and account for recognizable patterns of symptoms, severity of illness, effects of comorbid conditions, timing of phenomena, rate of progression of illness (staging), and responses to previous treatments. Our current evidence base simply cannot deal effectively with these sorts of complexities. The challenge for clinicians and epidemiologists in the next decades will be to develop appropriate clinimetric taxonomies and methodologies to classify and eventually analyse these sorts of clinical entities and to tackle the fundamental problems of evidence-informed clinical decision-making.

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34 Chapter 1 Thinking about psychiatry Evolutionary psychiatry ‘Nothing in Biology Makes Sense Except in the Light of Evolution.’ Theodosius Dobzhansky (1973) Article Title in *The American Biology Teacher*. 35(3):25–129 The origins of evolutionary psychiatry can be traced to the collaboration of Charles Darwin with Dr James Crichton-Browne on writing *The Expression of the Emotions in Man and Animals* in 1872. Regarding mental illness as an atavistic regression to a less

evolved state underpinned nineteenth-century degenerationistic views. Similarly, recapitulationism (or Ernst Haeckel's 'biogenetic law')—the idea that an individual's development summarizes the evolution of their species ('ontology recapitulates phylogeny')—popularized the view that criminals and psychiatric patients were fixations or regressions to earlier stages of evolutionary development and was responsible for scientific racism (the belief that some races are 'more developed' than others). It should never be forgotten that these ideas fermented into eugenic practices such as large-scale sterilization of psychiatric patients in early twentieth-century America and the genocide of over 100,000 psychiatric patients in Nazi Germany. In fact, evolutionary ideas were so popular in the early twentieth century that even Freud hoped to give his psychodynamic theory more credibility by linking it to ancestral inheritance—in his *Phylogenetic Fantasy* (written in 1915, but published posthumously). Many contemporary evolutionary psychiatrists credit Freud as a 'founding father' of evolutionary psychiatry for this (albeit phylogenetically erroneous) attempt to understand neuroses by looking to the ancestral environment of our species. The modern era of molecular and population genetics really began in the 1950s with Watson and Crick's description of the structure of deoxyribonucleic acid (DNA) in 1953 and the subsequent unravelling of the genetic code for Mendelian inheritance. The synthesis of evolutionary ideas that followed tried to draw a line under older 'evolutionisms' (e.g. Spencer's social Darwinism, Lamarckism, and degeneration theories) and place the evolutionary theory on a firm foundation of testable, hypothesis-driven biological science. In 1963, Niko Tinbergen wrote 'On aims and methods of ethology' in the *Zeitschrift für Tierpsychologie*, proposing his 'four questions' for understanding behaviour:

1. What physiological mechanisms are involved (causation)?
 2. How does behaviour develop during ontogeny (development)?
 3. To what extent is reproduction fitness enhanced (survival value)?
 4. How has it changed throughout evolutionary time (evolution)?
- Tinbergen maintained that to fully understand the behaviour of an organism, both proximate (questions 1 and 2) and ultimate (questions 3 and 4) causation must be considered together. Psychiatric research has generally focused on proximate causes, e.g. genetics, neuropathology, serology, traumatic experiences, internal psychological conflicts; however, in 1964, the evolutionary biologists Huxley and Mayr and the psychiatrists Osmond and Hoffer published 'Schizophrenia as

Evolutionary psychiatry a genetic morphism' in *Nature*, considering the 'puzzle of schizophrenia' and proposing that to keep a prevalence of about 1% in most populations, there must be selective advantages to compensate for obvious disadvantages. In 1967, a *Lancet* article by John Price 'The dominance hierarchy and the evolution of mental illness' argued that mental disorders, including psychotic depression and schizophrenia, were adaptive mechanisms in the social environment of our ancestors to cope with a strict group hierarchy. John Bowlby explored the idea of the environment of evolutionary adaptedness (EEA) in *Attachment* (1969). Indeed, over the last five decades, psychiatrists have increasingly attempted to understand mental illnesses by comparing them to behaviours seen in animal species as diverse as birds (Demaret, 1971), reptiles (MacLean, 1990), marsupials (Jones, Stoddart and Mallick, 1995), and monkeys (McGuire, 1988). Evolutionary (or Darwinian) psychiatry has faced strong criticism. At worst, it is seen as 'bad science' (E Psychomythology, p. 24), 'just-so story-telling', and simply speculation. In its purest form, evolutionary theory is too deterministic, reductionistic, and adaptationistic, not allowing for chance,

drift, and history. Social learning may also be an equally important source of individual and cultural preferences, beliefs, and behaviours (and, by extension, mental disorders). The reason to ask Tinbergen's ultimate questions is to arrive at a deeper biologically based understanding of mental disorders and to stimulate hypotheses (see Table 1.3) that can lead to research and ultimately new therapeutic options. Provided evolutionary psychiatry does not lose sight of its scientific principles, it may well help satisfy man's continued search for meaning.

Table 1.3 Evolutionary hypotheses regarding mental disorders

Model	View of disorders	Examples
Adaptionist	Oversensitive or excessive adaptations	Anxiety disorders reflect an overactive threat detection system
Mismatch	Behaviours suited to the ancestral, not modern, environment	Phobias reflect ancestral fears, e.g. dark, heights, snakes
Organic	breakdown of our evolved nature	Brain dysfunction due to proximate causes
Central nervous system	infection, lesions, mutations, and neurodevelopmental disorders	
Trade-off (balanced selection)	Genetic causes may confer some benefit to heterozygote carriers	Schizophrenia is the price we pay for sociality, language, or creativity
Senescence	Pathological genes avoid negative selection pressures by presenting in later life	Alzheimer's dementia/Huntington's chorea
Psychodynamic (displacement)	Normal defence mechanisms that are fixated, overactive, or contextually inappropriate	Suspiciousness becomes overactivated by hallucinations

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Ancient times 74,000 bc Sumerian records describe the euphoriant effect of the poppy plant. 71,700 bc First written record concerning the nervous system. 460–379 bc Hippocrates discusses epilepsy as a brain disturbance. 387 bc Plato teaches that the brain is the seat of mental processes. 280 bc Erasistratus notes divisions of the brain. 177 Galen lectures On the Brain.

Pre-modern 1649 Descartes describes the pineal gland as a control centre of the body and mind. 1656 Bicêtre and Salpêtrière asylums established by Louis XIV in France. 1755 Perry publishes A Mechanical Account and Explication of the Hysteric Passion. 1758 Battie publishes his Treatise on Madness. 1773 Cheyne publishes his book English Malady, launching the idea of 'nervous illness'. 1774 Mesmer introduces 'animal magnetism' (later called hypnosis). 1793 Pinel is appointed to the Bicêtre and directs the removal of chains from the 'madmen'. 1794 Chiarugi publishes On Insanity, specifying how a therapeutic asylum should be run. 1800–1850 1808 Reil coins the term 'psychiatry'. 1812 Rush publishes Medical Inquiries and Observations Upon the Diseases of the Mind. 1813 Heinroth links life circumstances to mental disorders in the Textbook of Mental Hygiene. 1817 Parkinson publishes An Essay on the Shaking Palsy. – Esquirol lectures on psychiatry to medical students. 1825 Bouillaud presents cases of aphonia after frontal lesions. – Todd discusses the localization of brain functions. 1827 Heinroth appointed as the first professor of psychological therapy in Leipzig. 1832 Chloral hydrate discovered. 1843 Braid coins the term 'hypnosis'. 1848 Phineas Gage has his brain pierced by an iron rod, with subsequent personality change. 1850–1900 1856 Morel describes 'démence précoce'—deteriorating adolescent psychosis. 1863 Kahlbaum introduces the term 'catatonia'. – Friedreich describes progressive hereditary ataxia. 1864 Hughlings Jackson writes on aphonia after brain injury. 1866 Down describes 'congenital idiots'. 1868 Griesinger describes 'primary insanity' and 'unitary psychosis'. 1869 Galton claims that intelligence is inherited in Hereditary Genius. 1871 Hecker describes 'hebephrenia'. 1872 Huntington describes symptoms of a hereditary chorea. 1874 Wernicke publishes Der Aphasische Symptomenkomplex on aphasias. 1876 Ferrier publishes The Functions of the Brain. – Galton uses the term 'nature and nurture' to describe heredity and environment. 1877 Charcot publishes Lectures on the diseases of the nervous system. 1883 Kraepelin coins the terms 'neuroses' and 'psychoses'. 1884 Gilles de la Tourette describes several movement disorders. 1885 Lange proposes the use of lithium for excited states. 1887 Korsakoff

describes characteristic symptoms in alcoholics. 1892 American Psychological Association formed. 1895 Freud and Breuer publish *Studies on Hysteria*. 1896 Kraepelin describes 'dementia praecox'. 1899 Freud publishes *The Interpretation of Dreams*. 1900s 1900 Wernicke publishes *Basic Psychiatry* in Leipzig. 1903 Barbiturates introduced. – First volume of *Archives of Neurology and Psychiatry* published in the United States. – Pavlov coins the term 'conditioned reflex'. 1905 Binet and Simon develop their first intelligence quotient (IQ) test. 1906 Alzheimer describes 'presenile degeneration'. 1907 Adler's *Study of Organ Inferiority and its Physical Compensation* published. – Origins

A brief history of psychiatry of group therapy in Pratt's work supporting tuberculosis (TB) patients in Boston. 1909 Brodmann describes 52 cortical areas. – Cushing electrically stimulates the human sensory cortex. – Freud publishes the case of Little Hans in Vienna. 1910s 1911 Bleuler publishes his textbook *Dementia Praecox or the Group of Schizophrenias*. 1913 Jaspers describes 'non-understandability' in schizophrenia thinking. – Syphilitic spirochaete established as the cause of 'generalized paresis of the insane'. – Jung splits with Freud, forming the school of 'analytic psychology'. – Mental Deficiency Act passed in the UK. – Goldmann finds the blood-brain barrier impermeable to large molecules. 1914 Dale isolates acetylcholine. – The term 'shell shock' is coined by British soldiers. 1916 Henneberg coins the term 'cataplexy'. 1917 Epifanio uses barbiturates to put patients with major illnesses into prolonged sleep. – Wager-Jauregg discovers malarial treatment for neurosyphilis. 1920s 1920 Moreno develops 'psychodrama' to explore individual problems through re-enactment. – Watson and Raynor demonstrate the experimental induction of phobia in 'Little Albert'. – Crichton-Miller founds the Tavistock Clinic in London. – Klein conceptualizes the development theory and the use of play therapy. – Freud's *Beyond the Pleasure Principle* published. 1921 Rorschach develops the inkblot test. 1922 Klaesi publishes the results of deep sleep treatment, which is widely adopted. 1923 Freud describes his 'structural model of the mind'. 1924 Jones uses the first example of systematic desensitization to extinguish a phobia. 1927 Jacobi and Winkler first apply pneumoencephalography to the study of schizophrenia. – Wagner-Jauregg awarded the Nobel Prize for malarial treatment of neurosyphilis. – Cannon-Bard describes his 'theory of emotions'. 1929 Berger demonstrates the first human EEG. 1930s 1930 First child psychiatry clinic established in Baltimore, headed by Kanner. 1931 Hughlings-Jackson describes positive and negative symptoms of schizophrenia. – Reserpine introduced. 1932 Klein publishes *The Psychoanalysis of Children*. 1933 Sakel introduces 'insulin coma treatment' for schizophrenia. 1934 Meduna uses chemical convulsive therapy. 1935 Moniz and Lima first carry out 'prefrontal leucotomy'. – Amphetamines synthesized. 1936 Mapother appointed as England's first Professor of Psychiatry. – Dale and Loewi share Nobel Prize for work on chemical nerve transmission. 1937 Kluver and Bucy publish work on bilateral temporal lobectomies. – Papez publishes work on limbic circuits and develops the 'visceral theory' of emotion. 1938 Cerletti and Bini first use 'electroconvulsive therapy'. – Skinner publishes *The Behaviour of Organisms*, describing operant conditioning. – Hoffmann synthesizes lysergic acid diethylamide (LSD). 1940s 1942 Freeman and Watts publish *Psychosurgery*. 1943 Antihistamines used in schizophrenia and manic depression. 1946 Freeman introduces 'transorbital leucotomy'. – Main publishes *Therapeutic Communities*. 1948 Foulkes' *Introduction to Group Analytical Psychotherapy* published. – International Classification of Diseases (ICD) first published by WHO. – Jacobsen and Hald discover the use of disulfiram. 1949 Cade uses lithium for treatment of mania. – Penrose publishes *The Biology of Mental Defect*. – Moniz awarded Nobel Prize for treatment of psychosis with leucotomy. – Hess receives Nobel Prize for work on the 'interbrain'. – Magoun

38 Chapter 1 Thinking about psychiatry defines the reticular activating system. – National Institute of Mental Health established. – Hebb publishes *The Organization of Behaviour: A Neuropsychological Theory*. 1950s 1950 First World Congress of Psychiatry held in Paris. – Chlorpromazine (compound 4560 RP) synthesized by Charpentier. – Roberts and Awapara independently identify gamma-aminobutyric acid (GABA) in the brain. 1951 Paire and Sigwald report the efficacy of chlorpromazine in psychosis. 1952 Diagnostic and Statistical Manual (DSM-I) introduced by APA. – Eysenck publishes *The Effects of Psychotherapy*. – Delay and Deniker treat patients with psychological disturbance using chlorpromazine. – Delay, Laine, and Buisson report isoniazid use in treatment of depression. 1953 Lurie and Salzer report use of isoniazid as an ‘antidepressant’. 1954 Kline reports reserpine exerts a therapeutic benefit on both anxiety and obsessive-compulsive symptoms. – Delay and Deniker, Noce, and Steck report favourable effects of reserpine on mania. – First community psychiatric nurse post established in the UK. 1955 Chlordiazepoxide, the first benzodiazepine, synthesized by Sternbach for Roche. – Kelly introduces his ‘personal construct therapy’. – Shepherd and Davies conduct the first prospective placebo-controlled, parallel-group RCT in psychiatry, using reserpine in anxious-depressive outpatients (with clear benefit). 1957 Imipramine launched as an antidepressant. – Iproniazid launched as an antidepressant. – Delay and Deniker describe the characteristics of neuroleptics. 1958 Carlsson et al. discover dopamine in brain tissues and identify it as a neurotransmitter. – Janssen develops haloperidol, the first butyrophenone neuroleptic. – Lehman reports the first (successful) trial of imipramine in the United States. 1959 Russell Barton’s *Institutional Neurosis in England* describes the adverse effects of institutional regimes. – Diazepam first synthesized by Roche. – Schneider defines his ‘first-rank symptoms’ of schizophrenia. – English Mental Health Act of 1959 allows voluntary admission to psychiatric hospitals. 1960s 1960 Merck, Roche, and Lundbeck all launch versions of amitriptyline. 1961 Knight, a London neurosurgeon, pioneers stereotactic subcaudate tractotomy. – Founding of the World Psychiatric Association. – Thomas Szasz publishes *The Myth of Mental Illness*. 1962 Ellis introduces ‘rational emotive therapy’. – US Supreme Court declares addiction to be a disease, and not a crime. 1963 Beck introduces his ‘cognitive behavioural therapy.’ – Carlsson shows that neuroleptics have effects on catecholamine systems. 1966 Gross and Langner demonstrate the effectiveness of clozapine in schizophrenia. 1968 Strömberg describes ‘brief reactive psychosis’. – Ayllon and Azrin describe the use of ‘token economy’ to improve social functioning. – Publication of DSM-II and ICD-8. 1970s 1970 Laing and Esterson publish *Sanity, Madness and the Family*. – Rutter publishes the landmark Isle of Wight study on the mental health of children. – Janov publishes *Primal Scream*. – Maslow describes his ‘hierarchy of needs’. – Axelrod, Katz, and Svante von Euler share Nobel Prize for work on neurotransmitters. 1971 British Misuse of Drugs Act passed. – Carlsson, Corrodi et al. develop zimeldine, the first of the selective serotonin reuptake inhibitors (SSRIs). 1972 Feighner et al. describe the St Louis criteria for the diagnosis of schizophrenia. 1973 International

A brief history of psychiatry pilot study of schizophrenia uses narrow criteria and finds similar incidence of schizophrenia across all countries studied. 1974 Hughes and Kosterlitz discover enkephalin. 1975 Research diagnostic criteria (RDC) formulated by Spitzer et al. in the United States (USA). – Clozapine withdrawn following episodes of fatal agranulocytosis. 1976 Johnstone uses CT to study schizophrenic brains. 1977 Guillemin and Schally share Nobel Prize for work on peptides in the brain. 1979 Russell describes bulimia nervosa. 1980s 1980 DSM-III published by APA. – Crow publishes his two-syndrome (type I and type II) hypothesis of schizophrenia. 1984 Klerman and Weissman introduce ‘interpersonal psychotherapy’. – Smith et al. first use MRI to

study the cerebral structure in schizophrenia. – Andreasen develops scales for the assessment of positive and negative symptoms in schizophrenia (SAPS/SANS) (E Schizophrenia, p. 97). 1987 Liddle describes a three-syndrome model for schizophrenia. – Fluvoxamine introduced. – Mednick publishes the first prospective cohort study of schizophrenia using CT. 1988 The ‘harm minimization’ approach to drug misuse introduced in Britain. – Kane et al. demonstrate the efficacy of clozapine in treatment-resistant schizophrenia. 1990s 1990 Sertraline introduced. – Ryle introduces ‘cognitive analytical therapy’. 1991 Paroxetine introduced. 1992 Moclobemide introduced as the first reversible inhibitor of monoamine oxidase (RIMA). – The False Memory Syndrome Society Foundation formed in the United States. – Publication of ICD-10. 1993 Huntington’s disease gene identified. – Launch of risperidone as an ‘atypical’ antipsychotic. – Linehan first describes her ‘dialectical behaviour therapy’. 1994 Publication of DSM-IV. – Launch of olanzapine. – Gilman and Rodbell share Nobel Prize for their discovery of G-protein coupled receptors and their role in signal transduction. 1995 Citalopram, an SSRI, nefazodone (dual-action SSRI), venlafaxine, a serotonin and noradrenaline reuptake inhibitor (first SNRI) all introduced. 1999 Hodges publishes first results from prospective Edinburgh High Risk (Schizophrenia) Study using MRI. 2000s 2000 Carlsson, Greengard, and Kandel share Nobel Prize for their work on neurotransmitters. 2002 Neuregulin-1 and dysbindin identified as susceptibility genes for schizophrenia. 2003 Aripiprazole, the first dopamine partial agonist antipsychotic, launched. – Caspi and colleagues show that genetic and environmental factors interact to modulate risk for depression and antisocial behaviour. 2005 The DISC1 gene, implicated in psychotic and affective illness, is shown to regulate cyclic adenosine monophosphate (cAMP) signalling. – The first non-commercial large-scale trial compares new and old antipsychotics—Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE). – Deep brain stimulation (DBS) trials show promise in treatment-resistant OCD and depression. 2006 Hall and coworkers show that the neuregulin-1 gene is associated with changes in brain function and psychosis in the Edinburgh High Risk (Schizophrenia) Study. 2007 A glutamate agonist (LY2140023) is found by Patel et al. to have antipsychotic effects in patients with schizophrenia. 2009 Genome-wide genetic analysis reveals both common and rare genetic variants involved in schizophrenia. Launch of the antidepressant agomelatine.

40 Chapter 1 Thinking about psychiatry 2010s 2011 Neural stem cells derived from peripheral samples reveal cellular changes in patients with schizophrenia and related disorders. 2013 Publication of DSM-5. Launch of the antidepressant vortioxetine. 2014 Launch of National Institutes of Health (NIH) BRAIN (Brain Research through Advancing Innovative Neurotechnologies) initiative in the United States (M <https://www.braininitiative.nih.gov>). The Schizophrenia Working Group of the Psychiatric Genomics Consortium publishes the largest genome-wide association study of schizophrenia in Nature of nearly 37,000 cases, identifying 108 schizophrenia-associated genetic loci. 2017 Hall, Rosbash, and Young share Nobel prize for their work on the molecular mechanisms controlling circadian rhythms. 2018 Publication of ICD-11.

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42 Chapter 1 Thinking about psychiatry The future Attempting to predict the future is a dangerous business. Predictions tend to be based upon contemporary ideas and have a tendency to overestimate some types of change and underestimate others. Wild inaccuracy is the usual rule. This is particularly so in medical science where change is often a result of chance discoveries (e.g.

penicillin) and sweeping reforms which make most then current knowledge redundant (e.g. the germ theory of disease). Currently practising psychiatrists are (or should be) keenly aware of the deficiencies of current psychiatric practice. We lack knowledge of the aetiology and pathogenesis of most psychiatric disorders; we have no objective diagnostic or prognostic investigations; and our drug and psychological treatments are often minimally or only partially effective. While we welcome the ongoing gradual progress in knowledge and treatments, we are naturally impatient for rapid and fundamental improvements—we hope to join the other medical specialties in moving ‘from the descriptive to the analytical’. Now, at last, it seems the tools are becoming available to develop a true understanding of psychiatric disease. We are, however, cautious—there have been false dawns before. The insights into mental mechanisms provided by the psychoanalytical pioneers in the first half of the twentieth century gave rise to hope that these methods would prove therapeutic in many mental illnesses. The discovery of effective antipsychotic and antidepressant drugs in the 1950s raised hopes that examination of drug effects would reveal the pathological mechanisms of the underlying diseases. The move to community care which followed Enoch Powell’s ‘Water Tower Speech’ in 1961 was driven by the hope that many of the deficits experienced by sufferers from mental disorder were not intrinsic to the disorders themselves but were related to institutional living. None of these hopes were fulfilled. However, in the first decades of the twenty-first century, we have a number of genuine reasons for optimism and excitement.

Genetics The information provided by the Human Genome Project and large linkage and association studies, combined with techniques of high-throughput genetic screening, allows identification of susceptibility genes for complex polygenic disorders. Advances in molecular biology will allow the functions of these gene products to be understood, potentially generating new therapies. We are increasingly coming to understand how susceptibility genes interact with the environment to cause illness, including the potential role of epigenetic factors in mediating the impact of environmental stresses on gene expression. Novel treatment approaches

In the last century, discovery of effective treatments led to aetiological hypotheses. In this century, the hope is that understanding of the molecular and chemical pathways involved in risk for illness will lead to the development of novel treatment approaches, therapeutics becoming

The future hypothesis-driven, rather than hypothesis-creating. Rational drug design will be aided by computer modelling and screening of large numbers of potential drug molecules. There will be further investigation of stem cell therapy in neurodegenerative disorders. Functional and diagnostic imaging

Current structural scanning methods (e.g. CT and MRI) reveal changes across cohorts of patients with major mental disorders but do not allow objective diagnosis in individuals. Many psychiatric disorders show no measurable abnormalities at all, using current structural methods. In the future, functional imaging (e.g. PET, functional MRI), either alone or in combination with structural scanning, may allow an understanding of how changes in neural systems contribute to illness and possibly true diagnostic imaging. Large-scale treatment trials

In current practice, even relatively common treatment decisions are not clearly evidence-based. The current evidence base is overly reliant on small randomized trials, uncontrolled trials, and ‘expert opinion’. Now, however, psychiatry researchers are following their peers in cardiology and oncology and recruiting to large-scale treatment trials. ‘Every generation enjoys the use of a vast hoard bequeathed to it by antiquity, and transmits that hoard, augmented by fresh acquisitions, to future ages.’ Thomas Babington Macaulay ‘I like the dreams of the future better than the history of the past.’ Thomas Jefferson ‘There are fish in the sea better than have ever been caught.’ Irish proverb

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