

HISTORICAL PERSPECTIVE

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Historical overview: Kraepelin's impact on psychiatry

■ **Abstract** This paper reviews the importance Emil Kraepelin put on disease course as a classificatory principle. It then outlines the academic reception of Kraepelin's disease entities outside Germany, charts the uptake of his diagnostic concepts within clinical practice in Britain, and compares data on admissions for bipolar disorders, involuntional melancholia and postpartum psychoses to the North Wales asylum during the period Kraepelin was working to data on contemporary admissions in an effort to shed further light on the validity of his diagnostic concepts.

■ **Key words** Kraepelin · dementia praecox · manic-depressive illness · bipolar disorder

Introduction

This paper outlines Kraepelin's use of disease course as a classificatory principle for the functional psychoses and how this led to distinctions between dementia praecox and manic-depressive illness, with a particular reference to manic-depressive illness.

Following from this, the paper explores the reception of Kraepelin's thinking outside Germany, both how his ideas were broadly received, and how his diagnoses came to be used in clinical practice.

Finally, the paper compares quantitative aspects of clinical presentations to mental health services both in Kraepelin's day and now to flesh out some of the issues his thinking sought to resolve. This will focus on the comparative frequency of hospitalization for

bipolar syndromes compared with other affective disorders, the relative rates of recovery of involuntional melancholia compared to other melancholias, and the apparent contemporary decline in the frequency of de novo onset postpartum psychoses.

■ Disease course as a classificatory principle

The drama in Kraepelin's 1899 Textbook lies more in the emergence of dementia praecox, later schizophrenia, than it does in the appearance of manic-depressive insanity. In the 5th edition published in 1896, Kraepelin had maintained a separation between hebephrenia, catatonia and the paranoid psychoses, disorders introduced by Kahlbaum and Hecker, but in 1899 based on the new criterion of disease course he included hebephrenia, catatonia and a range of paranoid psychosis within dementia praecox. This new disease was characterized by its course, which was one of progressive dementia [9].

The notion of using disease course as a classificatory principle for mental disorders had emerged with Kahlbaum [10, 12]. Within the German speaking countries others, such as Meynert, put more weight on indicators of neurological abnormality. Yet others, such as Wernicke, argued for a localization of disturbed functions as the defining feature of disorders. No one argued for a classification system based primarily on disease course as Kraepelin did.

Manic-depressive insanity had its place in the 1899 edition of the Textbook as a foil to dementia praecox, rather than as a worked out condition in its own right. In order to bring out the importance of disease course for his new system, Kraepelin had to have a contrasting disorder that did not lead to cognitive and clinical decline. Manic-depressive disorder was that contrast, and as a consequence, almost by definition, affected patients had to get better, and almost any patients who had a disorder that got better had a variant of manic-depressive illness.

In constructing the category of manic-depressive illness, Kraepelin took Kahlbaum's circular insanity

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and cyclothymia, as well as dysthymia, and stated that: “Over the years, I have convinced myself more and more that all of the described pictures are simply manifestations of a single pathological process... it is utterly impossible to find any definite boundaries between the different clinical pictures which have so far been kept apart” [13].

A bipolar alternation between excitement and stupor could not be a classificatory principle in its own right, in that a similar alternation happens in dementia praecox and dementia paralytica (General Paralysis of the Insane). But periodic, circular, and simple manias, in addition to melancholic disorders, could all be regarded as manifestations of the one illness if they all showed a remitting course.

When considering the presentations of affective disorders, in contrast to others, Kraepelin argued that there was not sufficient regularity among the different clinical presentations to distinguish different affective disorders. In fact, he argued that far from being consistently up or down, even in the course of one day many patients cycled through depressive and manic states or had mixed pictures such as agitated (overactive) depression or inhibited mania (manic stupor) or querulous mania. He also notes that patients can have a mixed condition in the sense of being manic one day and depressed the next. They can therefore alternate rapidly from pole to pole and also be disinhibited in relation to some activities while inhibited in others. On this point, he may have been decisively influenced by the work of his colleague Wilhelm Weygandt who outlined the concept of mixed states [20].

The problem with using disease course as the illness criterion that trumps all others can be brought out by considering two groups of disorders, the acute and transient psychoses in general of which I will refer to the postpartum or puerperal psychoses in particular, and involuntional melancholia.

When considering the postpartum psychoses, under the heading of acute confusional insanity, Kraepelin gave compelling descriptions of features that later formed the key features of the concept of cycloid psychosis [13]. However, he went on to argue that for the most part these postpartum cases were cases of manic-depressive illness. The clinical picture he outlined was distinctive and resembled something more like a steroid psychosis than either classic manic-depressive psychosis or schizophrenia, but the majority of these conditions remitted and on this basis he classified them as manic-depressive.

Catatonia suffered the opposite fate to the postpartum psychoses. Kraepelin recognized that catatonic features occurred with some regularity in manic-depression. These he seems to have passed off as consequences of the mixed states that manic-depressive disease could give rise to. The cases of enduring catatonia trumped the fleeting presentations found in mood disorders and as a consequence catatonia was subsumed into dementia praecox [5].

Just as with postpartum psychoses, the possibility that catatonia might be a disorder, independent or either dementia praecox or manic-depressive illness, almost vanished.

Postpartum psychoses and catatonia hint at a limitation of Kraepelin’s method. Kraepelin’s clinics in both Heidelberg and later Munich were relatively selective in the patients they took and while he did follow up patients in the local asylums he was not able to follow up systematically cases that never returned. A large number of frank but transient and single episode psychoses accordingly were never likely to get the weight that they might get in a classification system based on a follow-up of all cases.

But another disorder brings out the rigidity with which he held to the disease course criterion—the involuntional melancholias. These classic depressive psychoses have their onset over the age of 50, when patients typically present with a striking picture of disturbed sleep and appetite, diurnal variation of mood and either paranoid, nihilistic or guilt-laden delusions. In 1899 Kraepelin thought that these patients were much less likely to recover than other patients with mood disorders. Clinicians now would have no doubt that this condition should be added to manic-depressive illness. However, these conditions apparently failed to remit and this posed difficulties for Kraepelin. As a result, he let involuntional melancholia stand as a separate disorder until the 8th edition of his Textbook when he finally included it in the manic-depressive group [1, 14].

The difficulties Kraepelin had in accommodating remitting psychoses, such as are found in the postpartum psychoses, and potentially non-remitting affective disorders, such as involuntional melancholia bring out the problems his classification system posed. While disease course had been a neglected classificatory feature in psychiatry up till then, a rigid reliance on this criterion brings its own problems.

■ The reception of Kraepelin’s ideas outside Germany

When Kraepelin’s work was discussed both within Germany and outside it, it was largely in terms of dementia praecox. There is little or no mention of manic-depressive illness. A number of reasons can be offered for this. First the concept of manic-depressive insanity was a complicated one. On the one hand it included disorders not usually lumped together and on the other hand initially excluded one of the commonest affective disorders—involuntional melancholia. It also included depressive disorders that might never have manic features. Second, the appeal to mixed states, which was central to the concept, has never been taken up by clinicians.

Kraepelin’s clinical orientation was initially welcomed in America by Adolf Meyer as the breakthrough psychiatry was waiting for [17]. However,

Meyer, who later emerged as the leading figure in American psychiatry, shifted his ground between 1910 and 1920 and began to criticize Kraepelin as being too neurological, and as failing to take into account the fact that the patient's disorder took place in the context of their life story. Simply writing patients off as having an inevitably deteriorating condition was not good medicine [8]. Following Meyer, many American clinicians referred to paranoid, hebephrenic, catatonic and simple parergastic reactions rather than dementia praecox, and thymergastic reactions rather than manic-depressive illness. Eventually, both the parergastic reactions and dementia praecox were subsumed into Eugen Bleuler's schizophrenia, a much more commodious concept capable of extension to include a wide range of odd behaviors. There was a vogue to see many artists as incipient schizophrenics, just as there now is to see them as manic-depressive. It was only with the emergence of the schizophrenia concept following the publication of an English translation of Bleuler's work in 1950, that manic-depressive illness in America was free to take on a life of its own.

In Britain, the reception of Kraepelin's ideas was mixed. As early as 1904, Dublin physician Connolly Norman rejected dementia praecox as an over-inclusive entity [18]. Indeed, Norman was one of the first to put on the record the risk that institutionalization might confound the clinical picture, by creating a misleading impression of degeneration or dementia.

Thereafter there were regular references to Kraepelin's work at psychiatric meetings in Britain, in a way that did not happen with other German formulations. But these were all in terms of the validity of dementia praecox; some disliked the term dementia and some disliked praecox [11]. Manic-depressive illness was rarely raised. An English translation of Kraepelin's work did not become widely available in Britain until after the War. It is difficult to know how much the reaction to Kraepelin and other German thinking was colored by the First World War.

The French were also reluctant to embrace dementia praecox; they had difficulties conceding that all psychotic disorders had the same degenerative clinical course that Kraepelin had argued for dementia praecox. French clinicians distinguished instead among a variety of chronic psychoses and distinguished all chronic psychoses from acute and transient psychoses [19]. They maintained this tradition through to the discovery of chlorpromazine, which French clinicians such as Delay argued validated traditional distinctions between the chronic psychoses and schizophrenia [2, 3].

When it came to manic-depressive insanity, Kraepelin's concept may have ultimately survived and thrived primarily because he had picked a name that worked. Names as well as concepts have survival value. They contribute to what might now be called branding. From this point of view dementia

praecox was as poor a choice of name as possible but manic-depressive disease worked in that everyone could bring to it what they wanted.

But why manic-depressive illness? Why not manic-melancholic disease given that almost all the "depressions" Kraepelin was faced with were melancholic in terms of their severity and clinical features? The answer may lie in a quirk in the man—he had a partiality for novelty. Melancholia was an old-fashioned word. Depression was creeping into use. The first major paper on depressive illness was Carl Lange's in 1886 [16].

■ The use of Kraepelin's diagnoses in Britain

Kraepelin is celebrated now because his concepts came into use. Opened in 1848, the North Wales asylum at Denbigh offers an extraordinary opportunity to look at the incidence of mental illnesses and the uptake of concepts like Kraepelin's that cannot be reproduced elsewhere. When social scientists or historians look at the old asylums elsewhere they see institutions that had been built in the countryside but which by the twentieth century were engulfed within cities. Asylums that began dealing with relatively small rural communities drawn from one ethnic group by the end of their life were dealing with multi-ethnic urban communities that in terms of population growth were many multiples of the communities that had been there before.

In contrast, around 1900, three-quarters of the admissions to Denbigh came from individuals with classic Welsh surnames such as Jones, Roberts, Pritchard, Williams, Evans and Parry. In 2000, over two thirds of the admissions still came from individuals with Welsh surnames. The overall population furthermore is almost precisely the same in 2000 as it was in 1900 [7]. There are variations so that there were more children in the 1890s, and fewer people over the age of 65 where now the ratio is reversed, but this difference is of lesser consequence when it comes to manic depressive illness and schizophrenia, which typically begin between the ages of 15 and 55; this section of the population was the same to within a 1,000 people in 1900 as it was in 2000.

Elsewhere in the world, both because of geography and rising wealth, a growing number of people had a choice of hospitals but in North West Wales because of enduring poverty and by virtue of being hemmed in between the mountains and the Irish Sea, those with mental illnesses had nowhere to go except to Denbigh. Because of the choice available to patients elsewhere, including Heidelberg and Munich, it is difficult to know how representative patients ending up in the public or private asylums across the Western world between 1800 and 1950 were of the mental illness happening in their communities of origin, but this is not an issue for North Wales.

North West Wales did not urbanize. The area was desperately poor at the end of the nineteenth century and remains one of the poorest regions of Britain today. There was effectively no private practice 150 years ago and very little today. While people are much more mobile now and can travel elsewhere in Britain and get ill there, because of the National Health Service patients with severe mental disorders are typically sent back to their point of origin for treatment.

The resulting asylum records and the case register for modern admissions shed light on a number of issues. The first we will deal with is the impact of Kraepelin's diagnoses of dementia praecox and manic-depressive illness on clinical practice within Britain. The second set of issues, covered in the next section, have to do with quantitative aspects of the syndromes underpinning Kraepelin's diagnoses.

The first thing that strikes any reader of the asylum records is that up till 1900 most patients admitted to an asylum in Britain apparently had mania. As late as 1900, patients who were suicidal, patients with senility, patients with what now would be called schizophrenia were all labeled as manic. Over 55% of the diagnoses were for mania (see Fig. 1). Manic-depressive illness however was not dramatically more common 100 years ago than it is now. The explanation for this finding is that the term mania was being used then in a completely different way to the way it is used now. It referred to a state of overactive insanity, in contrast to melancholia, which designated states of underactive insanity. Around 1900, in response to growing clinical sophistication, and possibly primarily in response to Kraepelin's impact, the use of mania as a diagnosis in North Wales begins to fall, and it falls progressively to the current rate of less than 5% of patients. This pattern probably holds true for most of the large asylums in the English speaking world of that time.

Once the reader adjusts to the fact that mania cannot indicate bipolar disorder, two questions arise. First, when do modern diagnoses emerge and second how many manics were in fact bipolar. Whatever the differences there might be in terms of the agencies

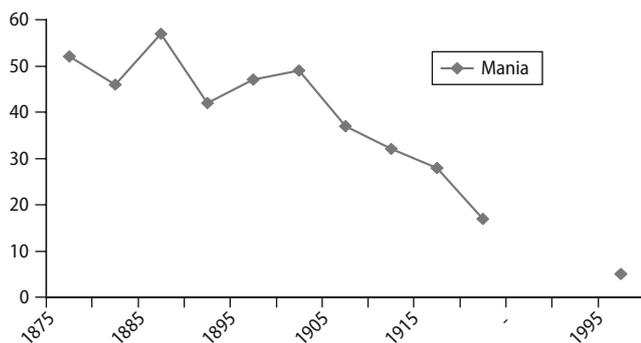


Fig. 1 The diagnosis of Mania as a percentage of all admissions to the North Wales Asylum: 1875–2000

that deluded patients think might have been persecuting them in 1900 compared to now, the clinical picture of a patient who shuts down for weeks or months on end and is then later grandiose and disinhibited is perhaps the most distinctive there is in psychiatry and easily spotted when it presents. The first question is covered here and the second in the following section.

As regards diagnosis, the picture begins to change in the early 1900s. Take the case of WT, who was admitted in 1891 at the age of 45 having been looked after at home by his family for a number of years. He had been a businessman, who spent a great deal of time traveling back and forth between Wales and Argentina. His family wondered if his first breakdown 17 years previously, from which he had recovered at home, had stemmed from an engagement to a Catholic woman, or whether it had been triggered by the general alarm that had accompanied an outbreak of Yellow Fever. He had recovered but was never quite the same. He continued working until his early 40 s, and thereafter his family committed him to the asylum where he remained until his death 23 years later.

On admission, in contrast to most patients, he seemed almost normal—far from manic in the sense of agitated or overactive. After some days grandiosity and probable delusional beliefs became apparent. These periods of elation alternated with mute and almost catatonic states, and he settled down to a cycle of episodes of depression, followed by over activity and periods of lucidity. In 1904, 13 years after admission, the notes indicate that his condition was then being viewed as circular insanity. Despite a wealth of detail, WT is in fact one of the most difficult patients to diagnose from the asylum, but the reference to circular insanity is the first of its kind in these records.

In 1906, a national conference on the classification of insanity in Britain introduced a new set of diagnoses [1]. This system proposed a new disorder, primary dementia, which was the equivalent of Kraepelin's dementia praecox.

Even before this conference, the North Wales records were recording diagnoses of dementia praecox. Thus Bessie Hughes, a 17-year-old girl admitted on the 16 of October 1905 with hebephrenic and catatonic features was noted to be a good case of dementia praecox, even though she was fit to leave hospital 9 months later. The records indicate that up till then a case like Bessie would have been diagnosed as melancholia with stupor. The term dementia praecox came into use rapidly in North Wales, and primary dementia was never taken up to the same extent. Dementia praecox was not replaced by schizophrenia in these records before 1949.

There could not be a greater contrast between the rapidity of the uptake of the dementia praecox concept and the use of manic-depressive illness as a diagnosis. The new national classification system

subdivided mania and melancholia into recent, chronic and recurrent mania or melancholia, and introduced the term alternating insanity. But none of these terms were used with any regularity. The fall in the frequency of diagnoses of mania in the first instance stemmed from an increase in the use of the dementia praecox diagnosis.

RO who was admitted in 1908 and discharged in 1909 was diagnosed with maniacal depressive insanity—a disorder not on the list. In fact, this odd use of words was a better description of his case as it was presented in the hospital records than a diagnosis of manic-depressive insanity would suggest, in that he only presents on one occasion, and shows features of agitated (or maniacal) depression without any alternation of mood.

Despite the example of RO, patients with mania or melancholia when admitted continue to be diagnosed as having mania or melancholia rather than alternating insanity or manic-depressive illness. There are no patients that demonstrate the regular switch of affective polarity first outlined by Falret and Baillarger in the 1850s. It is only in the 1920s, primarily in cases with previous admissions for mania or melancholia that we begin to find diagnoses of manic-depressive illness appearing.

In September 1920, a 30-year-old sailor, RP, was admitted with grandiose beliefs and violent behavior. He remained in hospital for over a year during which time, he had attacks of agitation at regular intervals. On discharge he was diagnosed as manic-depressive. This man was readmitted 2 years later and spent most of the following 15 years an inmate of the asylum, during which time he was noted to have a clinical state that alternated from manic to depressive poles on a one month cycle.

It was not however until 1924 that the diagnosis came into regular use. In that year three cases were diagnosed as manic-depressive. One was AA, whose records from 1924 outline a 60-year-old woman who had two admissions for what would now be diagnosed as psychotic depression—no hint of mania. ER, also admitted and diagnosed in 1924 as manic-depressive, had a postpartum psychosis. In 1924, WH had her tenth admission, and during this admission she was diagnosed as manic-depressive. There had been nine previous admissions starting from May 1900, mostly for mania, none of which led to this diagnosis. Later in the 1920s, the pattern of taking previous episodes into account takes hold, and also a willingness to make the diagnosis if the person during the course of one admission has distinct spells of elevated and depressed moods.

■ Quantitative aspects of Kraepelin's diagnoses

In this section, three issues will be addressed. The first is the relative frequency of bipolar affective disorders

in nineteenth century asylums and now. A second will be data on the rate of recovery of patients with involuntal melancholia. Third is the relative frequency of admissions for postpartum psychoses in Kraepelin's day and now.

Rates of admission for bipolar affective disorders

There were 3,872 admissions from North West Wales in the years between 1875 and 1924. These came from 3,172 patients. As noted, up to 1900 over 50% of these admissions were diagnosed as having mania. A further 35% of admissions were diagnosed with melancholia. Retrospectively these melancholic patients only appear to have had what would now be considered melancholia in approximately 10% of cases. The remainder would now be diagnosed as having schizophrenia, or in some cases senile dementia.

Among patients admitted for the first time during the 1875–1924 period only 127 (4%) had what retrospectively appears to be a bipolar disorder. Against the background population of North West Wales, this rate of admission gives rise to ten cases per million per year, a rate that remained constant across the 50-year-period, and continues to hold true to today [6].

In contrast, there were 658 admissions from 568 individuals for severe depression, or melancholia, to the North Wales asylum. This was 17% of all admissions. There were furthermore 1,041 patients with psychoses, who between them had 1,304 admissions. This immediately makes it clear that if Kraepelin had not amalgamated bipolar affective disorder patients together with unipolar depressive disorders, who comprised over 80% of the manic-depressive cohort in the North Wales sample, the bipolar patients would have been close to invisible.

From this perspective, it is clear why earlier concepts such as folie circulaire or folie a double forme were simply not used in a working asylum like Denbigh before 1900. Too few patients were involved. For just the same reason, a disorder like bipolar affective disorder could not have readily taken root in general psychiatric practice in the nineteenth or early twentieth centuries. The viability of the modern concept of a bipolar affective disorder depends critically on the diagnosis of manic, hypomanic or cyclothymic states in the community.

Of the bipolar patients admitted to the North Wales asylum, 60% were female, compared to the 66% Kraepelin reported [13]. The average age of first admission was 32 years old, with the youngest admission being for a 17-year-old. The average length of stay in hospital for any one episode was 6 months. Almost all patients went home well with only a very small proportion having continuous fluctuations in clinical state that precluded discharge. This group of

127 patients had 345 admissions and on average each person had four admissions every 10 years.

Today the district general hospital unit serving the same area has a slightly higher proportion of female admissions. The average age of first admission is 31 years old. The average length of stay is a month. But people have 6.5 admissions every 10 years. There is therefore a substantial increase in admission prevalence. It is not clear what benefits modern treatments have produced.

In the 1875 to 1924 cohort, 80% of the admissions for bipolar disorder were for manic presentations. Today over 50% of the admissions from bipolar patients are for depression. Thus either the presentation of the illness is changing, or treatment is having an impact on presentations, or we have a greater sensitivity to episodes of depression that would formerly not have led to admission.

The response rate of involuntional melancholia

The admission prevalence of the patients admitted to the North Wales asylum retrospectively diagnosed as having melancholia, or severe or psychotic depression (F322, 323, 332, 333) was 5.7/100,000 per annum. The admission prevalence for severe depression today in the same area in North Wales is 8/100,000 patients [4].

If we break these 568 patients down by age group and look at length of stay and rates of recovery we find that patients admitted in their 30 s had a 76% recovery rate and a median length of stay of 224 days. Patients admitted in their 40 s had a recovery rate of 72% and a median length of stay of 285 days. The patients with classic involuntional melancholia from this sample had an onset of a clinically similar disorder in their 50 or 60 s and older. For these patients the recovery rates for patients admitted in their 50 s were 65% and for patients admitted in their 60 s and over it was 56%. Patients admitted in their 50 s had a median length of stay of 261 day while patients admitted in their 60 s and older had a median length of stay of 203 days, respectively. Overall patients admitted in their 30 or 40 s were 1.2 times more likely to recover than patients admitted in their 50 or 60 s.

The main difference between younger and older age groups was an increased death in care rate. The death in care rate rose from 10% for patients in their 20 s to 44% for patients in their 60 s. This however was not death after an extended and refractory treatment course but often death rather early in the course of the disorder. This raises the prospect that other physical disorders might trigger melancholia, particularly in later life, and the reduced life expectancy in older patients might stem from this source. These figures do not support the notion that involuntional melancholia was a distinct disorder with

distinctive clinical course but the findings do mandate further research on possible physical antecedents to melancholic disorders.

Changes in the incidence of postpartum psychoses

Using admissions to the North Wales Asylum during the period 1875–1924 and to the current North West Wales medical and mental health services, Tschinkel and colleagues [21] extracted data on the prevalence, course and clinical features of postpartum psychoses during both the period when Kraepelin was working and a contemporary period (1994–2005).

The data are presented in Table 1. From this it can be seen that at the end of the nineteenth century, close to 10% of admissions among women of child bearing years, 3% of admissions overall, were for postpartum psychoses. This disorder was as common as bipolar affective disorders. Two different sets of women were admitted with postpartum psychoses. The larger of the two sets were women who had no mental illness prior to the postpartum period. A smaller group (20%) were women with a prior mental illness.

In the modern period, psychoses with a first onset in the postpartum period in North West Wales have all but vanished, while the incidence of postpartum psychoses in women with a pre-existing mental illness remains the same. There were a number of further features to the clinical picture of the postpartum psychoses admitted to the North Wales asylum. One was that over a third of these cases met criteria for cycloid psychoses. Second on follow-up, very few of these cases developed into manic-depressive or bipolar affective disorders.

Data from across Europe support these findings and suggest that psychoses with their first onset in the postpartum period may be vanishing. If so, this would support claims that these disorders are distinct from other disorders. Alternately, if regarded as affective

Table 1 The incidence of postpartum psychoses in North West Wales: 1875–1924 versus 1994–2005

	1875–1924	1994–2005
All female admissions	1,946	3,956
All women	1,577	1,827
All women of child-bearing age	1,100	1,032
All postpartum psychotic admissions	103	7
All women with postpartum psychoses	101	7
Women with no prior mental illness	80	1
Women with prior mental illness	21	6
Postpartum cases/all admissions from women of child-bearing age	9.2%	0.68%
All postpartum cases/1,000 births	0.34	0.19
Postpartum onset cases/1,000 births	0.26	0.03
All postpartum cases/100,000 childbearing years	3.43	0.94
Postpartum onset cases/100,000 childbearing years	2.70	0.13

disorders, establishing the basis for the apparent decline in frequency of these disorders may have implications for other affective disorders.

Discussion

These data taken from an epidemiologically complete sample of patients admitted to the North Wales asylum during a period covering Kraepelin's working life shed some light on his classification system and issues arising from that deserving of further research.

First the data point to a compelling reason why Kraepelin might have favored the concept manic-depressive illness rather than bipolar affective disorder. Cases with classic bipolar features were comparatively rare, and would not have supported an illness in their own right.

Second, in an effort to resolve the issues surrounding the classification of involuntional melancholia, Kraepelin had colleagues explore the remission rates for this disorder, and ultimately decided on the basis of the resulting somewhat ambiguous data to include this disorder within the manic-depressive group of disorders [1]. The data presented here from an epidemiologically complete sample appear clearer cut than those arising from the service in Munich. But while the issue of relative rates of recovery in cases of melancholia broken down by age may be resolved by these data, there still appear to be some grounds to believe that cases of melancholia arising in later years may offer research leads on factors triggering affective disorders.

Finally, the apparent disappearance of de novo onset psychoses from the postpartum period may also hold lessons for the origins of and appropriate classification of the functional psychoses. As Kraepelin recognized in later life dementia paralytica had many clinical features in common with dementia praecox [15]. While pinpointing an etiological factor such as *treponema pallidum* in this case supports distinguishing between these two disorders, even had this parasite not been identified, the fact that this disorder disappeared with the advent of antibiotics is a compelling argument for its distinctiveness.

Disclosure

M. Harris, F. Farquhar, J. Le Noury, S. Tschinkel declare that they have no competing interests. D. Healy has had consultancies with, been a clinical trialist for, been a speaker at symposia for, or received support to attend meetings from Astra-Zeneca, Boots/Knoll, Eli Lilly, Janssen-Cilag, Lorex-Synthelabo, Lundbeck, Organon, Pharmacia and Upjohn, Pierre-Fabre, Pfizer, Rhone-Poulenc Rorer, Roche, SmithKline Beecham,

and Solvay-Duphar. He has been expert witness for the plaintiff in 15 legal actions involving SSRIs and one patent case involving an antipsychotic.

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