Brit. J. Psychiat. (1983), **142**, 439–455

Lecture

Was Insanity on the Increase?

The Fifty-sixth Maudsley Lecture, delivered before the Royal College of Psychiatrists, 19 November 1982

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At the autumn meeting of the Medico-psychological Association in 1871, Maudsley—at that time President of the Association—read a paper entitled 'Is Insanity on the Increase?'. The question was then one of profound concern both to the British public and to psychiatrists. Not only had there been for years a constant need to build new asylums—a cause 'of terrible discouragement and complaint with the ratepayers' (Arlidge, 1859)—but also, as was clearly apparent in the publications of the Poor Law Office and the Annual Reports of the Commissioners in Lunacy, the number of the registered insane was increasing every year, far out of proportion to the increase in the population (see Fig 1). This circumstance, it was said, 'might well give rise to alarming apprehension of a mental degeneracy' in the country (Arlidge, 1862).

The increase was occurring not only in England and Wales, but in Scotland and Ireland too. 'There can be no question', said Maudsley in his paper of 1872, 'that there are a great many more insane persons shut up in asylums in this country now than there ever were at any other period of its history, or, perhaps, in any country at any period of the world's history'. But the explanation of this increase was 'more easily disputed than decided'.

Among medical men, the dispute was long and bitter. In one camp were those who believed that the incidence of insanity was increasing at an alarming rate and that the same was happening in Europe and in the USA: in the other camp were those who believed that the undoubted increase in the *numbers* of the recognized insane did not necessarily imply an increase in *incidence* and could be accounted for in other ways—ways which we might nowadays call 'nosocomial'. The term 'nosocomial' means 'of hospitals' (O.E.D.); but it has been usefully used in the special sense of embracing all those factors, other than the disease itself, which determine whether a person with the disease comes to be included in a register of hospital cases.

This sharp difference of opinion—between the alarmists who thought insanity was increasing and the nosocomialists who thought it was not—continued throughout the nineteenth century. In the early twentieth century, determined efforts were made by a specially appointed Statistical Committee of the Medico-psychological Association to devise ways in which the issue might be finally decided (*Journal of Mental Science*, 1904; 1905). But their efforts were interrupted by the Great War of 1914; and soon after that war, it became apparent that the question had lost its urgency. In his Maudsley Lecture of 1926, George Robertson discussed the statistics of insanity in Scotland for the years 1910–1924, and showed that the evidence indicated a decrease rather than an increase in rate during that period. He concluded that 'in these statistics there is no cause whatever for alarm'. The old bogey, of insanity in Britain being 'fearfully on the increase', seemed at last to have been laid to rest; and I cannot find that there was any further discussion of the matter during the next 50 years.

So the question raised by Maudsley, at this autumn meeting of ours one hundred and eleven years ago, was never resolved; and indeed, it has been said that it never could have been resolved because the appropriate data were not collected, or were not collected for a sufficient period of time. Yet it is my impression that during at least the last 30 or 40 years there has existed a silent presumption that the nosocomialists were right and that the incidence of mental disorder in Britain during the nineteenth century did not increase to any significant extent. Such a presumption would be in line with the widely accepted conclusion reached by Goldhamer and Marshall in their book *Psychosis and Civilization* (published in 1953) that, except for the

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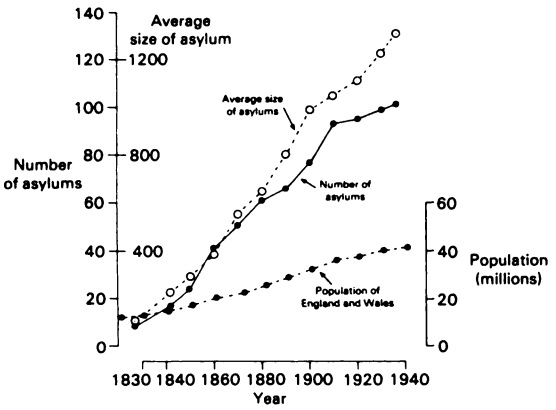


FIG 1.—The asylum era. Number and average size (places) of county and borough asylums in England and Wales, 1827–1936, and total population. Data for 1827 and 1842 are from Jones (1955); the remainder are from the Annual Reports of the Lunacy Commissioners and the Board of Control.

psychoses of old age, there was no change in the incidence of psychotic illness in the USA between the 1840's and 1940. It would also be in line with a general opinion (as expressed, for example, by Dunham in 1971) that the incidence of schizophrenia is probably about the same in all parts of the world.

These views have recently been challenged. In particular, the work of Goldhamer and Marshall has been criticised in the United States by the sociologist William Eaton (1980) and by the psychiatrist Fuller Torrey (1980). Reading their criticisms, it occurred to me that it might be of interest to re-examine, from a historical point of view, the nineteenth-century controversy over the increase of insanity in Britain. Such a study would be more than mere antiquarianism. The incidence of a disease, and its possible variations in time, are of basic importance in epidemiology; and although no decisive answer might be found, the probabilities could be re-assessed, and these might then be relevant for present hypotheses of the aetiology of the functional psychoses.

The Case for the Nosocomialists

The Lunacy Act of 1845 not only obliged counties to build asylums for the care of their insane poor, but placed on the Commissioners in Lunacy the power and the duty to inspect asylums and to make returns of the numbers of persons brought to their notice as 'insane' (the term was used to include lunatics and idiots). From 1846 until 1914 (when they were succeeded by the Board of Control), the Commissioners produced Annual Reports—the so-called 'lunacy Blue Books'—which gave statistics of insane persons in public and in private asylums, in workhouses (under the Poor Law Acts) and in home care. The collection of such nation-wide figures on what might be considered essentially a medical condition was something quite new, and it needed a few years before the system was considered to be satisfactory. But the establishment of this system, and the fact that it then continued almost unchanged for 60 years, is a remarkable tribute to the determination and efficiency of the Commissioners.

From their Annual Reports, and from the continually increasing demand for asylum accommodation, it appeared incontrovertible that, in one sense at least, insanity was on the increase. Thus it was upon those who held that this increase was not a real one—i.e. was *not* due to an increasing incidence—that the burden of proof lay. I shall therefore present first the case for the nosocomialists.

The 1850s

In their earliest Reports, the increasing numbers of registered insane were attributed by the Lunacy Commissioners to the incompleteness of previous records. However, the increases continued even when the system of recording seemed to be adequate. In their Ninth Report (Bucknill, 1855) the Commissioners, noting that during the past eight years the numbers of pauper lunatics in asylums had increased from about 10,000 to about 16,000 (i.e. by 64 per cent), observed that this increase 'may appear at first sight startling' and might lead to the 'painful and disheartening' inference that the incidence of insanity was increasing. But, they said, the increase in numbers could be explained in other ways. These were: *first,* that asylum care caused the insane to live longer there than they would have done outside, so that long-stay cases were accumulating; *second,* that the effect of various Acts of Parliament had been to increase both the numbers of persons ascertained as insane and the numbers admitted to asylums who might previously have been cared for at home or in workhouses; and *third,* that 'the far more comprehensive as well as scientific view of insanity' had led to the recognition of cases which 'from not exhibiting any strongly developed symptoms, were in former times, wholly overlooked'. They concluded that the increase of insanity was more apparent than real.

These three reasons, lower death rate, more complete registration, and more accurate detection, which the Commissioners first put forward in the early 1850s, appear to have been generally accepted for a number of years. In 1866, for example, the Lancet, while observing that 'the three large asylums for the county of Middlesex are full' and that 'extended accommodation for the insane poor is urgently required all over

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England', could add 'It must not be thought that insanity is increasing because more asylums are required'. Likewise the Pall Mall Gazette, in an article of 1869 'on the alleged increase of insanity', was still able to find in the arguments of the Lunacy Commissioners a satisfactory explanation for the evidence that the number of insane paupers in proportion to the population of England and Wales had more than doubled between 1836 and 1868 (*Journal of Mental Science*, 1869).

The 1860s and '70s

As time went on, however, and the pressure for asylum places continued, the matter came to be studied more closely. Lockhart Robertson (1869) dealt with the problem in his presidential address of 1867, and he added something to the arguments of the commissioners. The Lunacy Act of 1845, he said 'forms a new era in the history of lunacy, and it cannot be wondered that the greater care bestowed upon the insane should lead to a larger knowledge of their numbers as well as their conditions'. Moreover, the Lunacy Registration Act of 1853 required the medical officers of (pauper) Unions to make quarterly returns of the numbers of pauper lunatics *not* in asylums; this added to the accuracy of the total numbers. Similarly, the Irremovable Poor Act of 1861, by which a pauper lunatic became chargeable to the common fund of the Union instead of to his own parish, led to increasing numbers (especially of idiots) being sent to asylums because, whereas parishes had tended to maintain their insane poor at home in order to keep down the local rates, this inducement was now removed. The effect of these measures, it was argued, could account for the increase in asylum numbers; and the time would come when all lunatics had been ascertained and transferred, and there would be no further increase. Indeed, this seemed already to be happening, because the *rate* of increase of the numbers in asylums was falling, as was the rate of increase of admissions (see Table I). 'I think I am justified in saying', Robertson concludes, 'that we see the limits of our labours in providing for the care and treatment of the insane poor; and further, that we have nearly gained the desired end. It is allowing a wide margin in our calculations for the future if we place the possible total number of lunatics and idiots at one in 400 of the population . . . We should thus require, with a population of 22 million, 33,000 beds in public asylums. Of these, 26,000 are already provided.' (Table II).

Maudsley, in the paper of 1872 which I have mentioned, took a similar view: most of the increase was due to better recognition; part of it to a wider range of conditions being included (though this might be simply the result of administrative factors[1]); and part of it to a diminishing recovery rate (though he implies that the asylum system itself might be partly to blame for this[2]). As to the admission rate, he accepted that it had been increasing, but was this increase (he asked) greater than might be accounted for by the causes he had enumerated? He thought not; and 'for my part', he concluded, 'I think that one might fairly venture a prophecy that, 12 years hence, the ratio of admissions to the population will not be greater, if it be not less, than it is now.'

We might notice here another paper of Maudsley's, published five years later, in which he refers to this prophecy of 1871, a prophecy which, he admits, 'does not seem at all likely to be fulfilled in regard of pauper patients.' But the fact that the admission rate was continuing to increase could *now* be attributed, he said, to the so-called 'Four Shilling' Act of 1874, whereby the Government granted four shillings towards the local authority cost of maintaining each asylum patient—or, as Maudsley put it, 'an Act whereby the Government said, in effect, to parish officials, "We will pay you a premium of four shillings a head on every pauper whom you can by hook or crook make out to be a lunatic and send into an asylum".' As to the likely collapse of his former prophecy, 'how was it possible (he asks) to foresee in 1871 that a Conservative Government would come into power and forthwith put a direct premium on the manufacture of lunacy? It was impossible' (Maudsley, 1877).

TABLE I

Yearly rate of increase in asylum population, 1844–1868 (Robertson, 1869, Table IX)

Period	Mean yearly rate of increase
1844–49	5.64%
1849–54	6.09%
1854–59	3.41%
1859–64	4.83%
1864–68	3.82%

TABLE II

Ratio of insane to total population of England and Wales (Robertson, 1869, Table I)

Year	Total insane	Proportion of population
1844	20 611	1 in 802
1852	26 352	1 in 691
1858	35 347	1 in 544
1868	50 118	1 in 432

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The 1880s and '90s

The question of increasing insanity was debated as vigorously during the 1880s and 1890s as it had been during the '60s and '70s. From 1880 until his death in 1895 at the age of 67, Daniel Hack Tuke was the editor of the Journal of Mental Science, and his position as editor, we may presume, added to the influence of his strongly-held opinion that insanity was not on the increase. In an article of 1886, he re-emphasized that the only sound test of increasing insanity was the proportion of 'occurring cases'—what we would now call the incidence rate. An increase in the number of existing cases in asylums (i.e. an increase in prevalence) was not a sound test, as this could be due to an accumulation of cases from falling rates of death or discharge. He gave figures to show a recent fall in asylum death rates, and a calculation to show that this fall would imply 3,000 fewer deaths and therefore 3,000 more patients in asylums. He noted, as Lockhart Robertson had done 20 years before, that the rate of increase in the numbers of insane had been falling, and also that the rates for first admissions (i.e total number of admissions less transfers and re-admissions) had actually shown a decrease. Finally, he gave a graph of admission rates for 'first attacks', returns for which had been available in the lunacy Blue Books since 1876. He concluded: 'these figures are very satisfactory so far as they exhibit no increase in the amount of *occurring* insanity since the year 1878.' (Table III).

We should notice here some of the technical difficulties which Tuke had to contend with. At no time during the nineteenth century does there seem to have been any clear understanding, in the statistical study of insanity, of the need for what we would now call the definition of a case. The idea of a 'first-ever admission to an asylum' being a good working definition of a case of insanity and a basis on which a study of changes in incidence rate could usefully be made was never fully reached. Tuke did not consider 'first admission' a satisfactory index, partly because it was not necessarily a *first-ever* admission (the patient might have been previously admitted to some other asylum) but more because, as Tuke rather cumbrously put it, 'first admissions . . . are not identical with first attacks, for obviously a patient may be admitted for the first time into an asylum and yet not be labouring under his first attack.' He evidently believed that a true index of occurring insanity should refer only to recent cases, and that cases of insidious onset and cases where there had been earlier attacks not needing admission should be excluded. But his usage of 'first attack' was criticized, particularly from America, and Tuke himself (1894) was later ready to accept that the returns for first attacks were untrustworthy[3].

TABLE III

'First' admission rates to asylums in England and Wales, 1871–1885 (adapted from Table E in Tuke, 1886)

Period	Admission rate (per million population)	Change in rate
1871–75	429	
		+7.4%
1876–80	461	
		−1.9%
1881–85	452	

Another major contribution to the debate came from a statistician, Noel Humphreys. His article 'Statistics of insanity in England, with special reference to its alleged increasing prevalence' was published in the Journal of the Royal Statistical Society in 1890. He observed—what everyone accepted—that the available statistics did not allow of a 'sound and trustworthy' answer, but he introduced a new argument. He compared the numbers of registered insane, as found by the Lunacy Commissioners, with the numbers enumerated at the censuses of 1871 and 1881 (Table IV): these censuses had included a question on the number of residents in each household who were 'imbecile or idiot, or lunatic'[4]. The differences between the census numbers and the registered numbers, he said, must indicate the numbers of the unregistered insane; and the fact that the proportion of unregistered insanity was lower at the later census was an indication of 'the increasing accuracy of registration'. Thus the ever-increasing number of the insane, as shown in the Reports of the Lunacy Commissioners, was to be accounted for by a gradual mopping-up of the pool of unregistered cases. Humphreys does not mention—nor indeed does Hack Tuke, who uses this argument in his last paper of 1894—that the Census returns, completed (we must presume) by householders of widely varying knowledge, opinion and responsibility in these matters, might not constitute a very reliable source of data on so emotional a topic. Another comment which might be made in retrospect is that many, perhaps most, of the non-registered insane reported in the censuses would have been idiot children, the group most likely to remain at home; and that the decrease in the size of the non-registered pool might in part reflect a decreasing proportion of mentally retarded children in the community because of the fall in birth-rate dating from the 1870s, which implies a fall in family size and in the number of children born to older women.

Better recognition and registration was one reason, Humphreys said, for the increasing numbers of the 'existing cases' of insanity[5]. Another reason for the accumulation of patients in asylums was the diminishing death rate there: 'It is beyond question that the rate of mortality in asylums has declined' he said, and he

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gave figures to show that this was so both in lunatic asylums (Table V) and in the metropolitan asylums for imbeciles and idiots. Concerning the use of 'first admissions' as an index of incidence, Humphreys had the same doubts as Tuke; there was no way, he said, of determining what proportion of first admissions were 'really new cases' and how many were previously existing in the reserve of cases in workhouses or with relatives[6]. For what they were worth, the figures showed no increase in rate during the previous ten years, and indeed a decline during the latest quinquennium. Humphreys's final cautious conclusion was that 'without venturing to say there has been no increase of insanity in England in recent years, many reasons have been pointed out for refusing to accept any insanity statistics that we at present possess as conclusive evidence for a real increase in the rate of occurring insanity'.

The last study to support the nosocomialist view that there was no need to suppose any increase in the *incidence* of insanity in England and Wales was the special report of the Commissioners in Lunacy on the alleged increase of insanity (1897). Essentially a summary of previous arguments, it also provided one new one, based on the age distribution of asylum patients. One of the major deficiencies of the statistics collected by the Lunacy Commissioners was, as Humphreys had observed, the absence of any routine data on age at admission to asylums or age at death there. The importance of age-specific rates only gradually became recognized during the latter half of the nineteenth century, and although Maudsley had remarked on it in his 1872 paper, no routine data became available. However, the censuses of 1881 and 1891, which had enumerated the insane in asylums, provided data on their ages. In the Commissioners' Special Report a table shows that for insane persons in the age group 20–45—the period of greatest liability to insanity—the proportion relative to the population was no greater in 1891 than it had been in 1881. The 'obvious inference', say the Report, was that 'accumulation and not fresh production had been the most influential factor' in the increased numbers of asylum patients[7]. This, together with the weight of previous arguments, led the Commissioners to the following conclusion: 'We have thus, we think, demonstrated at least the probability that much of the apparent increase of insanity has been due, not to an increase in the incidence of that disorder, but to the aggregation of persons affected by it and to their re-distribution'. These are words which, we might now be tempted to think, reflect the uneasy compromise of a committee divided in its opinions; but this was to be the last authoritative statement on the subject until George Robertson's Maudsley Lecture of 1926.

TABLE IV

Numbers of insane found at census and by the Lunacy Commisioners in 1871 and 1881 (Humphreys 1890, from Table A)

Year	Census enumeration	Number ascertained by Lunacy Commisioners	Deficit in ascertainment
1871	69 019	56 755	18%
1881	84 503	73 113	14%

TABLE V

Annual asylum death rates in England and Wales, 1859–1888 (from Humphreys, 1890, Table D, p. 228)

Period	Death rate
1859–68	10.31%
1869–78	10.17%
1879–88	9.55%

The Case for Increasing Incidence

Those nineteenth-century psychiatrists who believed that the incidence of insanity *was* increasing had, on the face of it, a much easier case to make. They did not deny that some of the undoubted increase in prevalence was to be explained in the way the nosocomialists claimed, i.e. by increased recognition of cases and by patients staying longer in asylums, but they argued that such effects could only be temporary, whereas the increase in numbers of the insane had been continuous from the time of the earliest statistics. If Acts of Parliament or better diagnosis drew attention to cases previously unrecognized, the time should come when the pool of undiagnosed cases had been mopped up[8]; and if patients lived longer in asylums than they would have done outside—and there was no proof of this—then after 20 years or so these patients would have reached the natural limit of their lives and so there should be no more accumulation from that cause[9]. In any case, the admission rate to asylums showed a generally increasing trend; and even though there was considerable year-to-year fluctuation in this rate and the statistics of first admissions were somewhat unsatisfactory, the reasonable conclusion was of a real increase in the number of new patients being admitted.

The number of insane in Britain

Harrington Tuke, in his presidential address of 1873, observed that Dr Lockhart Robertson had 'adduced all that can be brought forward in advocacy of the hopeful view that the statistical returns lead to a fallacious conclusion . . . I regret to say that the elaborate Annual Reports of the Commissioners in Lunacy, and the

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inference to be drawn from them, seem to me unanswerably to demonstrate the reverse.' These statistics, together with a table divided into age-groups, prepared for him by William Farr, 'appear to prove', said Tuke, 'that a great wave of insanity is slowly advancing.' The discussion which followed his address, and which was reported in the *Journal of Mental Science,* clearly shows the conflict of expert opinion at this time.

Much of the evidence for increase came not from the lunacy statistics but from medical men with long and close experience of particular districts. In 1869, Dr MacCabe, Superintendent of the Waterford District Asylum, contended that there were 'tolerably accurate returns' of the numbers of the insane in all parts of Ireland. Between 1851 and 1861 these numbers had increased by 6 per cent, while the population had fallen 12 per cent. In his own district during this time, the proportion of persons found to be insane had almost doubled, from 1 in every 690 to 1 in 350.

The increase in lunacy in Ireland, he believed, was 'a well-established fact'. This opinion continued to be expressed by Irish physicians. In his paper of 1894, Thomas Drapes, Superintendent of Enniscorthy Asylum, compared statistics for first admissions to asylums in Ireland with those in England and Wales. For Ireland, the first admission figures were derived from those of all admissions, less transfers and re-admissions; but they included admissions from workhouses, a group which had been omitted from Hack Tuke's tables on the ground that such cases were not 'first attacks'. It is clear now that, insofar as a first admission to an asylum would have been the best definition of a case of insanity, Drapes' procedure was right here and Tuke's was wrong. Drapes concluded that the increasing first admission rate in Ireland 'must be regarded as indicating a decided increase in occurring insanity'. As regards the cause of the increase, he noted that there was no good evidence for an increase in the part played by heredity or consanguineous marriage, and that the effects of emigration had probably been overestimated, though he rather spoils these sensible observations, we might now think, by attributing the increase to the Celtic temperament: 'the quick-witted, passionate, versatile and vivacious Celt has, for those qualities which make him so charming, too often to pay the price of instability'.

Like Ireland, Scotland was for the most part a thinly populated country where a man might acquire close knowledge of a local community. Jamieson was physician at the Royal Aberdeen Hospital, and in 1876 he expressed his opinion, based on 35 years' professional experience, that 'the most remarkable phenomenon of our time has been the alarming increase of insanity'. Whereas in 1840 there had been seven asylums in Scotland, in 1876 there were 24; and whereas in 1844 the asylum in Aberdeen had held 150 patients, now it had 480, and in addition there were three new asylums, each with 100 patients in them[10].

The number of insane abroad

The question of an increase in insanity was also being debated in other countries, but I will here refer only to such observations as were noted in the *Journal of Mental Science.*

In France, the asylum population increased rapidly between 1838 and 1862 (Lunier, 1870; Robertson, 1871); but Lunier, observing that the *rate* of increase had then begun to fall off slightly, attributed most of this increase to an increased public confidence in the use of asylums, adding that any increase in incidence was "une proportion insignificante le chiffre total des entrées". Yet a few years later, at the discussion of Harrington Tuke's presidential address, a Parisian physician said that the intermarriage of families where insanity prevailed was one cause of the continued increase in the numbers of the insane in France (Tuke, 1873, p. 479); and in the discussion of Humphreys's paper (1890), it was remarked that 'the increase in the number of lunatics in France had gone on in recent years at a more rapid rate than in England'.

In the United States, the increase in the number of the insane had caused concern since at least the early 1850s, when Jarvis (1852) concluded that 'insanity is an increasing disease[11]. From a study of the statistics of insanity in Massachusetts, which showed an 80 per cent increase in the number of first admissions between 1868 and 1886, Pliny Earle (1887) concluded that the figures 'appear to show that there has been a considerable increase, even in recent insanity, out of proportion to the gain in population'. His opinion was reinforced in a later paper by Sanborn (1894) entitled 'Is American insanity increasing?' Sanborn accepted that the three factors of better care, better registration and a wider definition of insanity could have accounted for some of the earlier increase in the number of insane. Yet, 'still we find this insane accumulation going on as fast as 50 years ago, and in the face of influences that ought to yield just the countrary result'. For this reason—and because, as he indicated, the statistics of insanity in Massachusetts had been particularly reliable over the preceding 15 years—he believed that there must have been a 'very substantial' increase in the incidence of insanity there and, I doubt not, in most of the United States . . . If any other interpretation can be put upon the figures given, nobody will be more pleased than myself; but that seems to me hardly possible.'

An Assessment of the Evidence

I shall now attempt to assess the evidence for and against the view that insanity was increasing in Britain

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during the second half of the nineteenth century. Contemporary authors could of course consider only the statistics available to them at the time, whereas we can now take a longer view. To an epidemiologist, the main deficiency of the Lunacy Commissioners' statistics is that they were designed to serve administrative rather than medical ends; but we have also to remember that epidemiology was then an undeveloped science and that the need for case definition and for age-specific rates of first-ever admissions was not recognized, or was recognized too late to be useful. In addition, of course, 'insanity' was a legal rather than a medical concept, and embraced not only all varieties of mental illness ('lunacy') but all varieties of retardation ('idiocy') as well[12].

Prevalence statistics

I will first consider the arguments used by the nosocomialists to support their view that the obvious increase in the numbers of ascertained insane did not necessarily imply an increase in the incidence of insanity. There were three types of argument.

Previously unrecognized insanity

The first was there had been a large number of cases of unrecognized insanity in the population, and that these were gradually being recognized as a result of various Acts of Parliament, greater medical knowledge, and increased public confidence in asylums. It was argued that although this recognition had been the cause of the increasing numbers of insane under care, the pool of unrecognized cases was being emptied and the time would come when the numbers of recognized insane would no longer continue to increase. Lockhart Robertson, in 1869, believed this desired end had almost been achieved, and he predicted that the proportion of the insane in the general population would never fall below 1 in 400, and that the limit of the need for asylums would be 1500 beds per million population. Yet as Fig 2 shows, his prediction of the maximum prevalence rate was overtaken within five years, and by the year 1914 the proportion of the insane to the population was 1 in 266, and the proportionate number of asylum beds was more than twice his maximum, (at 3100 beds per million). We have already noted Maudsley's prophecy of 1871, that in 12 years time the admission rate would show no further increase. In fact, by that time the rate had increased by nearly 15 per cent, and in another 12 years was to be increased by 50 per cent. Hack Tuke in 1886, and Humphreys in 1890, also argued that the admission rates were levelling off, and indeed that the last quinquennial average had actually shown a fall. This was true, but as we can now see (Fig 5), the effect was only temporary and the rate rose as steeply as ever during the next three quinquennia.

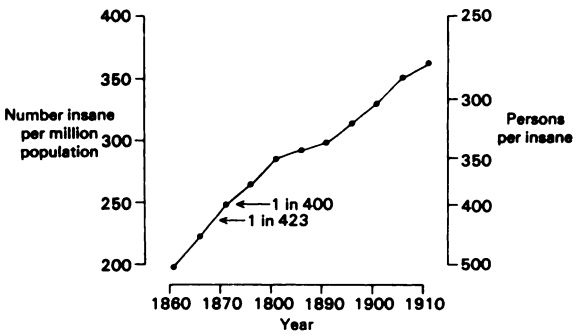


FIG 2.—Numbers of ascertained insane per million population in England and Wales: quinquennial averages 1859–1913. Data from the First Report of the Board of Control (for 1914), Table II

Accumulation of patients

The second explanation for the increase in the number of the recognized insane was that chronic cases *accumulated* in asylums. Accumulation occurs whenever the number of admissions exceeds the combined numbers of discharges and deaths. Unfortunately, the lunacy statistics were not always such as to enable a simple calculation to be made, and arguments had to be based on a consideration of rates of recovery and of deaths. Clearly, if either of these rates were falling, there would be more patients remaining in asylums. The best statistic for recovery rate was based on the number per 100 admissions who were 'discharged as recovered'. Tuke, in 1866, noted that this rate had shown little change since 1870, when the data first became available, and concluded that recovery rate did not appear to be 'a disturbing element'. Humphreys (in 1890) found the statistics of recovery to be 'so vitiated by the disturbing element of relapses' that no useful conclusion could be drawn from them. On the other hand, the evidence for a *decrease* in recovery rate was used by the Lunacy Commissioners in their Special Report of 1897 as an argument *for* accumulation. The actual numbers (Fig 3) point to a clear fall in recovery rates from about 1890, though we might think that when the Special Report was being written, the trend towards a fall was not then clear enough for the Commissioners' case to be very sound.

Death rates in asylums (expressed as the number of deaths divided by the daily average resident number) were more clear-cut than recovery rates, though the absence of any break-down by age at death much decreased their value. Humphreys took the evidence for decreasing death rates as supporting the case for accumulation, though he accepted that the interpretation was uncertain because the death rate would increase if the average age of patients increased and

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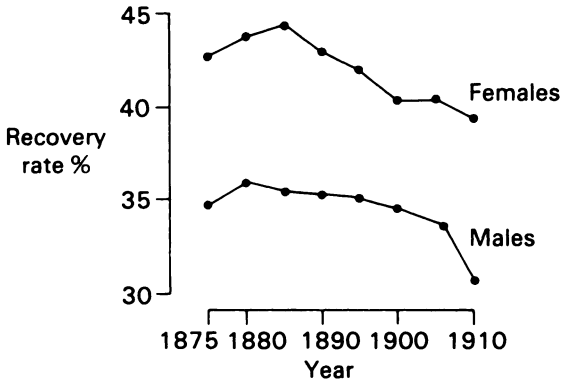


FIG 3.—Asylum recovery rates in England and Wales, expressed as number of stated recoveries per 100 admissions: quinquennial averages 1873–1912. Data from the First Report of the Board of Control (for 1914), Table VII.
Note: these rates cover county and borough asylums, hospitals, licenced houses, state institutions and private single patients. Table V of the Report gives decennial averages for asylums only, which show essentially the same trends.

would decrease if ('as is probably the case') the proportion of acute cases diminished. Hack Tuke, in 1894, used the same argument, saying that the mortality rate in asylums 'is distinctly lower than it was 20 years ago', and the Commissioners followed suit (1897). However, the figures collected in the Board of Control's Report (1914) show there was a decline in the death rate between 1870 and 1885, but no such trend thereafter (Fig 4). Thus once again the nosocomialists were using evidence which supported their view when taken over a relatively short preceding period, but which was uncharacteristic of a longer period. A further difficulty in the use of death rate is that, when considered by sex, the male rate shows a general decrease and the female rate an increase.

Private patients

The third argument—and to my mind much the weakest—for the increase in the insane being due to nosocomial factors was that the increase had been mainly in pauper patients and had been relatively small in the private class. The argument was used by the Commissioners as far back as 1855, when they noted that the increase in the number of lunatics over the preceding eight years had been 64 per cent for paupers, and only 15 per cent for private patients. Forty years later, an editorial review in the *Journal of Mental Science* (1895) drew attention to the fact that the number of private patients in Scotland had not been increasing and commented that this was 'one of the strongest indicators that there is no real increase in the amount of mental disorder in the country' because if the alleged increase were due to the strain of modern life then 'it ought to show itself especially in the classes above the ranks of manual labour'. The same argument was urged in the Special Report of the Commissioners in 1897. The lunacy statistics do indeed show a fall in the ratio of private patients to the population between 1880 and 1895, but thereafter a fairly rapid increase. In any case, a separate consideration of private cases seems, from the medical point of view, to be unsatisfactory. Not only does private care reflect the varying play of market forces but, as Maudsley pointed out in 1872, insanity was a pauperising disease, so that many once well-to-do patients had come down in the world by the time institutional care was needed[13].

Conclusion

There is no doubt that *some* of the increase in the numbers of insane was due to nosocomial factors—increased recognition (in the statutory sense) and increased length of asylum stay. The question is: how much? In the absence of hard data, there could only be, and still can only be, opinions. But from the above considerations, I conclude that the arguments of the nosocomialists, though reasonable enough at the time they were made, do not hold up when a longer view is taken of the statistics[14]. To a much more considerable degree than the nosocomialists were prepared to admit, the increase in the numbers of the insane did represent an increase in the real prevalence rate of

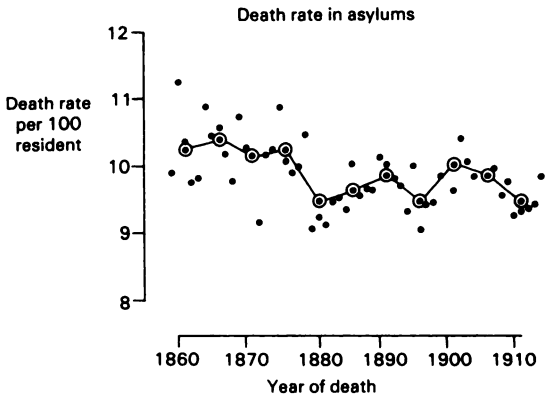


FIG 4.—Asylum death rates in England and Wales, 1859–1914, calculated as deaths per 100 residents (daily average). Yearly rate are shown by dots, quinquennial averages are circled. Data from Annual Reports of Commissioners in Lunacy. Note: these data include hospitals, licenced houses, etc. Table VI of the First Report of the Board of Control gives decennial averages, by sex, of death rates in asylums only.

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insanity; and if the *prevalence* rate was increasing, then it was not unlikely that this was due, at least in part, to an increase in *incidence* rate.

Admission statistics

By the 1890s it had become generally accepted that 'the only true criterion of the increase or decrease of insanity is to be found in the number of first attacks' (Drapes, 1894), but it was later agreed that Hack Tuke's and the Lunacy Commissioners' restriction of 'first attacks' to recent acute illness leading directly to asylum admission was unfortunate. Data for 'first admissions' were available from 1869 though, as Tuke stressed, these were not first-ever admissions but only first admissions to a particular institution. First-ever admissions were not recorded until 1898, so that only a small series is available up to 1914. However, yearly figures for total admissions (excluding transfers and admissions to idiot establishments) are available from 1869 onwards, and there is reason to believe they can be of value. The 'first admissions' for each of the years 1869 to 1897 show a ratio to the total admissions which is constant within very narrow limits at about 88 per cent ($r = 0.992$). Similarly, there is an almost constant ratio between first-ever admissions and total admissions for the years 1898 to 1914 (about 82 per cent, $r = 0.995$), and this is true for each sex. In other words, there are very close correlations between first admissions, as variously measured, and total admissions. It is thus reasonable to suppose, I think, that the admission rate for total admissions during the period 1869 to 1914 gives a pretty accurate index for the 'first-ever admission' rate (Figs 5, 6). With slightly less reliability, this argument can be extended back to the earliest date for which admission figures are available, 1859[15]. Although we do not have the age-specific rates, I find it difficult to avoid the conclusion that between 1859 and 1900 there was a very considerable increase in the admission rate of new patients to institutions for the insane in England and Wales, and therefore a very considerable increase also of the incidence rate of insanity.

We might also notice here that the decade after the 1900 seems to have been a water-shed for lunacy statistics. Not only did the admission rate cease to rise (*Journal of Mental Science*, 1909; Commissioners, 1911), but two other distinct trends occurred: the asylum death rate, which had been essentially unchanged since 1860, began to fall; and the recovery rate (a less satisfactory statistic), which had been falling since about 1880, began to rise. We can only guess at the reasons for these phenomena, but they may explain why the question which so alarmed the nineteenth century—was insanity on the increase?—lost its urgency in the twentieth.

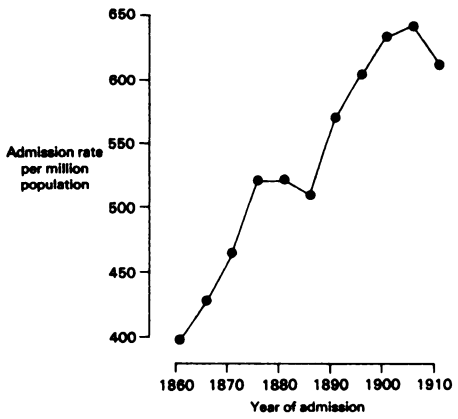


FIG 5.—Asylum admission rates for England and Wales based on the total population: quinquennial averages, 1859–1914. Admissions include re-admissions but exclude transfers and admissions to idiot establishments. Rates calculated from admission numbers: data from Drapes (1894), and Reports of the Lunacy Commissioners and Board of Control. Rates for 1859–1868 estimated from numbers of admissions plus transfers (see text).

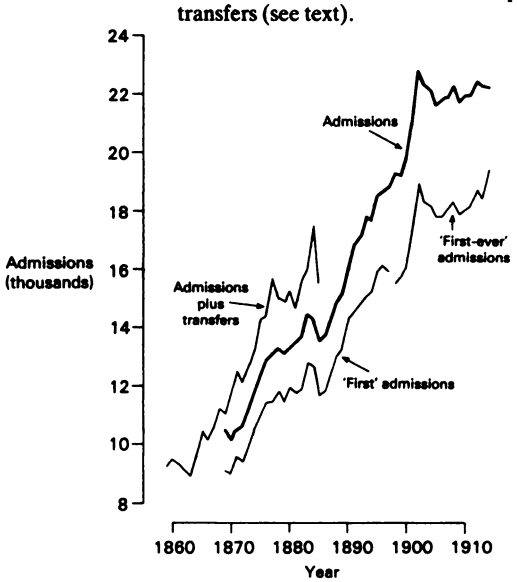


FIG 6.—Numbers of patients admitted into county and borough asylums, etc. in England and Wales, showing the close correspondence between different categories of admission. Admissions (heavy line) include re-admissions but exclude transfers and admissions to idiot establishments. 'First' admissions were first admissions to a particular asylum. The figure shows the years 1859–1914 for which data in each category are available. The high numbers of admissions-plus-transfers in 1877 and 1884 reflect high transfer numbers consequent on the opening of new asylums. Data from Drapes (1894) and the Reports of the Commissioners in Lunacy and the Board of Control.

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Explanations of the Increase

The earlier evidence

The only other person, so far as I am aware, to have made a recent study of the nineteenth-century English lunacy statistics has come to the same conclusion as myself. In his book *Museums of Madness* (1979), Scull pointed out that the system of enumerating the insane remained substantially unchanged from 1846 onwards, and that this weighed against the view that registration became more accurate, i.e. that a pool of unrecognized cases was being mopped up. He argued that if accumulation of patients in asylums had been the main cause of increased prevalence, then patients in private hospitals should also have accumulated, for the mortality rate there was about the same as in the asylums and the recovery rates were even lower: but this did not happen. Scull also drew attention to the national statistical studies of the first half of the century, which had later been dismissed as inaccurate. He concluded that they were carefully made and agreed with local studies, and that there was no good reason to doubt their accuracy[16].

The rapid increase in prevalence rate shown by these early statistical studies reflected a very general impression, dating from the late eighteenth century, that insanity was becoming commoner. Jonathan Swift, like Maudsley after him, provided a sum of money for the establishment of a hospital for the mentally ill. But in his will, Swift expressed doubt that a sufficient number of insane persons could be found to occupy the modest building he had in mind, and so he directed that any spare places should be given over to physically ill patients. That was in Dublin in 1747. Some 60 years later, William Halloran (1810) undertook an enquiry 'into the cause of the extraordinary increase of insanity in Ireland', having found that between 1789 and 1809 the numbers of insane in the city of Cork (where he was asylum physician) had 'advanced far beyond the extent upon which the humane founders had calculated'.

Similar impressions were being recorded in England. Thomas Arnold (1782) referred to the 'vast increase of the disorder', which he could attribute only to 'the present universal effusion of wealth and luxury'. William Perfect (1787) referred to the belief that 'instances of insanity are at this day more numerous in this kingdom than they were at any former period', and he suspected that one factor might have been 'the epidemic catarrh, more generally know by the name of the *Influenza,* which raged with such violence... in the year 1782'. William Pargeter (1792) wrote that the lack of progress in understanding and treatment of maniacal disorders was shown by this 'hideous malady which so amazingly prevails at this day'.

Such observations continued into the nineteenth century. In his *Practical Remarks* (1811), Bryan Crowther referred to insanity as 'an affection so rapidly becoming prevalent among all orders of society', and Alexander Morison (1826) noted the recent increase of mental disorder both in Great Britain and France (ascribing it to 'free governments and political commotions')[17]. Prichard (1835) discussed the question at length, listing the differences of opinion; he concluded that 'the apparent increase is everywhere so striking that it leaves on the mind a strong suspicion . . . that cases of insanity are far more numerous than formerly'. The remarkable output of treatises on insanity in the latter part of the reign of George III (Pierce, 1919) was, one might think, as likely to have been due to the general impression of its increasing prevalence as to the more commonly accepted explanation of public interest in the King's illness[18].

This impressionistic and statistical evidence from the late eighteenth and early nineteenth centuries, taken with the firmer evidence of the Reports of the Lunacy Commissioners, makes it reasonable to suppose that the *prevalence* rate of insanity in Britain was increasing throughout the nineteenth century. There are no useful data on admission rates before 1859 and therefore none on which the *incidence* of insanity before then can be estimated. Only by analogy with later events could an argument for increasing incidence in the first half of the nineteenth century be supported, but to my mind the analogy is a fair one.

Why the admission rate increased

I now turn to consider possible reasons for such an increase, and particular why the 'first admission' rate to asylums should have increased during the last four decades of the nineteenth century. There are two possibilities. The first, the one that understandably so frightened the public, is that the incidence of insanity increased without there being any diminution in the severity of the condition. The second, and more reassuring, possibility is that the increase was due to the admission of increasingly milder cases. We have no sure way of determining the relative contribution of these two factors. Scull, in his analysis, does not consider the first possibility at all: and he finds an adequate explanation solely in terms of milder cases. To the question why so many milder cases should be admitted when there was a continued pressure for new beds, Scull gives a sociological answer, which may be summarized in his statement that 'on the whole it was the existence and expansion of the asylum system which created the increased demand for its own services, rather than the other way around'[19].

Now while it is very probable that milder cases were being admitted—cases which would earlier have gone, in the first instance at any rate, to a workhouse—I find

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it difficult to accept that the whole or even a large part of the increased number could for so long a period of time have simply been milder cases. In particular, Scull's view that the asylum system expanded first and then new patients were found to fill it up is hard to reconcile with the 'terrible discouragement and complaint' of the rate-payers faced with the demand for new asylums. One would suppose rather that the reasons for that demand must have been urgent, compelling and inescapable. Moreover, if milder cases had been the main cause of the increasing admission rate, then the asylum death rate should have decreased and the recovery rate increased, whereas in fact the death rate was static and the recovery rate declined markedly from the mid-1880s.

There is also other evidence that the prognosis of asylum cases was worsening. Granville (1877) believed that the proportion of patients who passed into a state of chronic dementia had increased (he blamed it on non-restraint). Savage (1890) was of the opinion that 'the form of insanity was worse' than formerly, though he could not back it up with statistics. The Commissioners in Lunacy (1899), noting that the recovery rate was falling although the appliances for skilled treatment were steadily mounting, concluded that this 'can only be due to the admission of less favourable cases'. The same idea was voiced in America, where Pliny Earle (1887) referred to 'the not improbable fact that insanity, as a whole, is really becoming more and more an incurable disease'.

From these considerations there appears to me to be a strong case for thinking that a considerable, perhaps a major, part of the increase in the asylum admission rate was due to a real increase in the incidence of insanity, of a kind not less severe than formerly.

Which disorders increased?

"If lunacy be on the increase", wrote Lockhart Robertson in 1871, 'it should be shown in which of its varieties the increase occurs'. He himself suggested that the increase might be in general paralysis, 'as it is in France'. But that was before separate statistics on general paralysis were published in the Blue Books, and it is evident from these that the admissions for general paralysis were only about 7 per cent or 8 per cent of the total (and only about 2 per cent for females), and that their proportion to the total did not change much over the years[20].

We can get an idea of the relative proportions of the different forms of insanity from the official statistics for the years 1909–1913 (Board of Control, 1914). These show that the group of conditions which we would now include in the term 'functional psychoses'—mania, melancholia, delusional insanity and secondary dementia—formed at least 75 per cent of the total. There is no reason to think that the organic cases could have been responsible for a major proportion of the overall increase in admission rate[21], and the conclusion must be that most of the increase was associated with the functional psychoses. But whereas we can say that delusional insanity, together with primary and secondary dementia, would have been closely related to what we now call the paranoid and schizophrenic psychoses, we have no way of distinguishing the relative proportions of schizophrenic and affective psychoses among the manias and melancholias, for the Kraepelinian delineation of *dementia praecox* had not then been adopted (Hare, 1981).

There is, however, some information to be gained from these figures. If the increase had been principally among the affective disorders, we should have expected an increase in the rates of recovery and readmission and a decrease in the death rate; but these did not occur. In fact, the evidence for the accumulation of chronic cases, together with the lack of any marked change in the death rate (until after 1905) suggests that it was the condition we now call schizophrenia which was most likely to have been the main cause of the increased admissions. Another piece of statistical evidence which seems to support this is the change which occurred in the relative proportions of admissions for mania and for melancholia (Fig 7). This change was, of course, recognized at the time. Clouston in 1891 noted 'the unprecedented increase' in the admissions for melancholia to the Royal Edinburgh Asylum. He attributed it to the influenza epidemic of 1889–90: 'the influenza poison burns up nervous energy and leaves the brain in some cases unable to recuperate'. Robert Jones (later Sir Robert Armstrong-Jones), in his presidential address of 1906, wondered whether the early physicians knew of the condition increasingly referred to as *dementia praecox*—a condition 'then apparently so rare, now so common'—and said that such cases almost invariably begin in depression. 'It was justifiable to conclude that they were classed as melancholia', he thought, and that would account for the rise in the relative proportion of admissions in that class[22].

I suggest therefore that there are reasons for thinking that, insofar as there was an increase in the incidence of insanity in Britain during the latter part of the nineteenth century, this increase was principally in that type of insanity which, in the 1890s, Kraepelin called *dementia praecox* and which we now call schizophrenia.

An epidemiological hypothesis

Now it is evident that if the incidence of schizophrenia was increasing during the second half—and perhaps also during the first half—of the nineteenth

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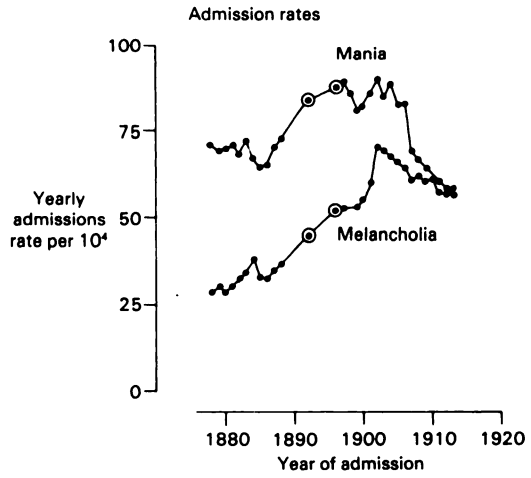


FIG 7.—Asylum admission rates for mania and melancholia: data from Reports of the Commissioners in Lunacy. Between 1887 and 1897, the only data available are quinquennial averages (circles).

century, there would have been an earlier time when it was a comparatively rare condition[23]. I think the commonly held view is that the incidence of schizophrenia has always been much the same: but that common opinion is certainly not based on historical evidence. In its acute stage, schizophrenia typically presents a striking clinical picture—of delusions, thought disorder and hallucinations in a young adult, with no sign of mental confusion or physical disease—but one may search in vain for any such description before the nineteenth century. There were many British writers in the latter part of the *eighteenth* century who set themselves to describe in detail the various types of madness and their associated signs and symptoms, but I have been unable to find there, even in the first edition of Haslam's *Observations on Insanity* (1798), any account indicative of what we would recognize as acute schizophrenia. Andrew Harper, in 1789, said it was well known 'that young people are hardly ever liable to insanity and that the attack of this malady seldom happens before an advanced period of life', and in 1861 the Frenchman Renaudin remarked on the increasing number of cases where insanity had begun before the age of 20, adding that 'formerly, insanity of early age was a very rare exception'. It was also Tuke's impression in 1886, with which Savage concurred, that 'considerably more young people of both sexes break down mentally than there did formerly'. This question—whether descriptions of a disorder corresponding to schizophrenia can be found in the older literature, and if not why not—is debatable and I will not discuss it further here, although it does seem to me that those who believe schizophrenic-like disorders have always been with us, and always with about the same incidence rate, have yet to make a convincing case on purely historical grounds[24].

The view of schizophrenia as a perennial disease has been maintained on other grounds, and in particular it is implicit in the aetiological hypothesis put forward by Professor Manfred Bleuler (1978). On this hypothesis, schizophrenia is caused by the inheritance of an imbalance of normal genes, leading to the development of a type of schizoid personality which may later be tipped over into schizophrenia by the cumulative effect of traumatic psychological experiences. These experiences are non-specific and of a kind which will be unavoidable in the ordinary course of adult life. There are no important environmental causes of a purely physical kind. This is a hypothesis which can neatly explain many facts about schizophrenia which have proved hard to explain otherwise.

But my inclination to search for an alternative hypothesis lies primarily in the hope of finding one less pessimistic than Bleuler's. For although in Bleuler's view the symptoms of schizophrenia may be alleviated by treatment, his hypothesis holds out no prospect of our ever being able to prevent schizophrenia by the elimination of some specific environmental cause or even—in the long term—of the genetic load being reduced by natural selection.

On Bleuler's hypothesis, schizophrenia is not an illness and the patient has no physical disorder. An alternative hypothesis, which brings schizophrenia properly into the realm of medicine, is that there *are* specific environmental factors of a physical kind, which have yet to be found. I am the more emboldened to adopt this alternative in a Maudsley lecture because Maudsley himself was a firm believer in the physical origin of mental disorder[25]. Now once we think of schizophrenia as a disease with specific environmental causes, it becomes reasonable to accept that its manifestations and severity may have changed in the course of time and in response to changes in the prevalence or virulence of these causes and in the varying resistance to them which the prevailing conditions of human society permitted. The conclusion which I have drawn from my present study—that the incidence of schizophrenia increased in Britain during the nineteenth century—would come within the scope of such a causal hypothesis.

Dr Fuller Torrey (1980) was, I think, the first to put forward the idea that schizophrenia had been an uncommon disorder in Europe and America until towards the end of the eighteenth century, and that thereafter schizophrenia—or a particular type of it—

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became increasingly common. What I suggest now is that the lunacy statistics of Britain provide evidence in support of Torrey's idea. We then have the hypothesis of a slow epidemic of schizophrenia which in Europe, and perhaps also in the United States, began some 200 years ago and which can be attributed to the changing effect of some specific causal factor of a physical nature.

Conclusion

A hypothesis is useful insofar as it can explain a wide variety of observations and can point the way to further research. I should like to conclude by indicating some of the ways in which the 'slow epidemic' hypothesis provides a medical explanation of certain phenomena associated with schizophrenia which hitherto have received mainly psychological or sociological explanations.

A rapid increase in the incidence of schizophrenia, and therefore of 'insanity', at the end of the eighteenth century would very simply explain the abrupt development of interest in mental disease and the publication of numerous books on the subject at that time. It would also account in a most straightforward way for the asylum era: the real increase in insanity made urgently necessary the establishment and increasing provision of a specialized system of care. An increasing need for asylums occurred at about the same time in Britain, France and America, and perhaps also (though I have not specially studied it) in Germany and Russia, and it is not easy to see how the sociological explanations of the need for asylums can cover countries which had such widely different social and political systems.

The hypothesis would also explain why there are no satisfactory descriptions—or none that I have so far been able to find—in the medical or general literature before the nineteenth century of a disorder resembling acute schizophrenia. It would also account for the remarks by medical writers, whom I have quoted, on the former rarity of insanity in young persons.

A phenomenon which has proved difficult to account for on purely genetic grounds—and which would also be difficult to explain sociologically—is the apparent persistence of schizophrenia in spite of the low fertility of schizophrenics. This difficulty disappears on the hypothesis that schizophrenia (at least in the form best known to the industrialized world) was an uncommon disorder until about 200 years ago.

The hypothesis that the incidence of schizophrenia increased because of some change in the effect of a specific environmental factor carries the implication that further changes in incidence will probably occur; and by analogy with the history of epidemic disorders we might expect a period of rapid increase in incidence to be followed by a more gradual decrease and by changes in the severity and manifestations of the disorder. The change in the mania: melancholia ratio might be so explained—it would certainly be hard to explain in sociological terms. There has been no clear evidence of any change in the *incidence* of schizophrenia during the present century, though any comparatively slight change would be hard to demonstrate because of the problem of diagnosis. However, there is good evidence for a decrease in *severity*, as shown by improvement in prognosis; and Professor Ødegård, in his Maudsley Lecture of 1966 (published 1967), concluded that this amelioration had become apparent in the 1930s, a time when it could not easily be attributed to advances in treatment. There is, of course, well- documented evidence of changes in the *clinical manifestations* of schizophrenia.

During the past decade or two a great deal of research has suggested an association of schizophrenia—or one type of it—with pathological changes in the brain; and two aetiological hypothesis of a strictly environmental kind have been put forward, one implicating a dietary factor and the other an infective (viral) factor. The historical evidence, which I have suggested indicates a change in the incidence of a schizophrenia-like disorder in Britain during the nineteenth century, is certainly compatible with a somatic cause and may, I think, be considered as lending support to these aetiological hypotheses, particularly the infective one.

I am aware that the ideas I have put to you may seem speculative. What is clear, I think, is that in Britain during the second half of the nineteenth century the incidence of insanity, as measured by the asylum admission rate, showed a remarkable increase. The question then arises, how far this increase is to be explained in sociological terms, as the increasing admission of milder cases, and how far in medical terms as an epidemic of a mental disorder. In this lecture I have wished only to suggest to you that a medical explanation of the asylum era is worth considering, as perhaps containing an element of truth. 'Truth', said Maudsley (1917) in his old age, 'is a pleasant abstraction, a visionary and ever-receding ideal to be pursued . . . We shall not capture it; the joy lies in the pursuit.'

Notes

(1) 'What with the opening of county asylums, the stringent statutory provisions with regard to the insane, the prosecutions for receiving insane persons without compliance with these, and the official stricture on their management in workhouses, it has come to this; that people now see lunacy in forms of imbecility and illness in which they would never at one time have dreamt of doing so.' (Maudsley, 1872).

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(2) The lower percentage of recoveries, according to Maudsley (1872), 'is probably owing, in great part, if not entirely, to the hopeless character of the disease in many of those who have been admitted during the last 25 years . . . Still it is a question deserving of more attention than it has yet received in this country whether the present practice of crowding the insane of all sorts into large asylums, where the interests of life are extinguished, and where anything like individual treatment is well nigh impracticable, is so much superior to the old system in affecting recoveries as some persons imagine.'

(3) Sanborn (1894) wrote of Tuke's 1886 paper, 'I distrust very much the record of *first attacks;* so far as my observations goes . . . there is nothing in the proverbially doubtful statistics of the insane more dubious than those affecting to give the date of a "first attack".' Tuke, in his last paper on the subject (1894), said he was unable to supply updated information on his 1886 table of first attacks because 'I have now reason to believe that the returns which have since been published cannot be trusted.' The untrustworthy later returns had shown a very marked increase in the rate of first attacks.

(4) During the earlier part of the nineteenth century, the term 'imbecility' was used for what later came to be called 'dementia.' Thus Connolly says (1849) that young and promising persons may become insane 'and after some months of excitement fall into hopeless imbecility' (page 2); and 'the extreme of imbecility is that state of inactivity of all the faculties, to which the term dementia is now generally applied'. Humphreys was still using 'imbecile' 'to describe persons suffering in later life from chronic dementia'. This does not affect his argument, which is based on the numbers of the insane (i.e. lunatics plus idiots). But his usage, and the requirement of the census forms, indicates that a distinction was still being made between a lunatic (one who at the time of his admission was in a state of what would now be described as a florid psychoses) and an imbecile (one admitted in a state which we would now describe as chronic schizophrenic deterioration).

The term 'idiot' was also used at one time for the final state of disordered intellect consequent on an attack of madness (Cox, 1806).

(5) The historical problems of statistical nomenclature are illustrated by the title of Humphrey's paper and also by his statement that the increase of existing cases of insanity 'has been mis-called an increasing prevalence of insanity'. What he calls 'prevalence' we would now call 'incidence'; but Humphreys, like Farr before him, perfectly understood the principle. Hack Tuke (1886) also used prevalence in this sense.

(6) 'The value of the Commissioners' statistics of admissions to asylums is vitiated', says Humphreys, 'by the impossibility of separating the really new cases from those already existing in workhouses, or from pauper cases residing with relatives, or from the large reserve of unrecognized cases.' Here Humphreys seems to be accepting the opinion of Tuke that a distinction must be made between 'first attacks' and 'first admissions'.

(7) There is a difficulty in accepting this inference. What was needed was the ages of patients at the time of first admission, whereas the Census returns gave only the age at the census date and took no account of mean duration of stay, proportion of re-admissions, or age distribution of first admissions, any of which might have changed from one census to the next. The Commissioners supported their inference with a table giving age at admission for the years 1883 to 1895, but this gives only numbers, not rates, for patients aged 25–44 at admission. The number admitted in 1883 was 6,833, and in 1895 it was 8,341 an increase of 22 per cent. The increase in the general population of all ages between these two years was only 9 per cent.

(8) Duncan (1870) quoted figures to suggest that the effect of the 1861 Act on increasing the numbers in asylums lasted only two or three years. As the numbers continued to mount (he said), 'we are bound to accept the fact that there is a steady increase in the lunacy of the population of England & Wales and Ireland.' Eames (1885), in his presidential address, concluded that accumulation could not account for such a large increase in numbers as had occurred at the Cork Asylum (from 687 patients in 1873 to 926 ten years later); whatever the cause, insanity was 'decidedly on the increase'. Corbett (1893) began his criticism of the nosocomialist view with the words: 'the theory promulgated by the majority of the Lunacy Commissioners with resolute persistency, in the face of facts and figures that should convince the most casual observer to the contrary, is that "the increase is only apparent".' See also Boyd (1871) and Brushfield (1872).

(9) For Scottish Asylums during the 1870's, Mitchell (1879) showed the overall death rates to be some five times as high as those of the general population, and for the younger age groups to be nearly ten times as high. Among patients in the West Riding Asylum, Crichton Browne in 1868 found no increase in life span during the previous 40 years.

(10) An unsigned (presumably editorial) comment on Jamieson's paper says that 'no-one who has given serious attention to the question will feel quite satisfied' with his conclusion. Over several decades the editors of the *Journal of Mental Science* displayed a

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marked bias towards the nosocomial view. Articles or reports pointing to an increased incidence of insanity are generally given adverse editorial criticism, whereas those of the opposite view are uncriticized or approved. One paper, entitled 'Insanity is decreasing' (Chapman, 1896), is of such poor quality that its acceptance for publication surely lay in its title rather than its substance.

(11) Twenty years' further experience only strengthened his opinion. In 1871, Jarvis wrote: 'in the United States, Great Britain, Ireland, and other civilized nations as far as known, there has been a great increase of provision for the insane within 40 years, and a very rapid increase within 20 years. Hospitals have been built seemingly sufficient to accommodate all lunatics within their respective state, county or district. These have been filled, and then crowded, and then pressed to admit still more. They have been successively enlarged, and then other institutions built and filled and crowded as the earlier houses were.' Yet the numbers of the insane at that time (1871) had 'all but doubled' twenty years later (Corbett, 1893).

(12) Idiots were admitted to county and borough asylums except where special idiot establishments existed (principally in the metropolitan area). The only common variety of mental illness which was more or less clearly distinguishable from the rest was general paralysis of the insane, separate statistics for which were first given in 1878.

(13) There are other reasons for thinking that no satisfactory conclusion could be drawn from the statistics of private cases. The total number was relatively small about a tenth of the number of pauper cases; the sex ratio was different from that of paupers, and indeed underwent a reversal (there had beeen an excess of males up to 1880, but thereafter an increasing excess of females); and from 1870 an increasing proportion of private patients were in county and borough asylums.

(14) During the nineteenth century, when the numbers and proportion of the insane continually increased, many of the most distinguished psychiatrists set out to show that this didn't *necessarily* mean insanity was increasing. On the other hand, George Robertson in 1926 found that the numbers and proportions of the insane had decreased in Scotland over the preceding period of 15 years. He drew optimistic conclusion from this; and no-one, so far as I know, suggested that the figures did not *necessarily* mean insanity was decreasing.

(15) The earliest admission data in the lunacy Blue Books (from 1859) are given only terms of the numbers admitted each year, *including* re-admissions and transfers. For the years 1869 to 1877 we are able to compare these numbers with those of all admissions (excluding transfers): over these nine years, the correlation coefficient is 0.9. The close relation between numbers of first admissions and of total admissions had been noticed by Drapes (1894).

(16) Sir Andrew Halliday (1828), who made an extensive study of the numbers of the insane, wrote 'I have been persevering and strict in my inquiries. I have laboured incessantly now for twenty-five years.'

(17) It has been suggested that, as most of these writers were proprietors of private mad-houses, they had an interest in spreading this view, but at least one such proprietor was taking the opposite view in 1820, and by 1828 was convinced of a 'general diminution in the number of lunatics' (Burrows, 1828). But Burrows admitted that the only ground he had for this belief was that, because of the superior mode of treatment available in asylums, the proportion who recovered was greater than before and consequently 'the aggregate number of the insane must be lessened'.

(18) In France, Esquirol considered the increased interest in the subject of insanity to be due to the writings of Pinel, and the increased numbers of the insane to be due to greater public confidence in asylums (Burrows, 1828). But later (in 1845) Esquirol conceded that there must have been some real increase—caused, he thought, by the laxity of French morals during the 1820s and 1830s (Schwab and Schwab, 1978).

(19) Scull considered that asylum doctors welcomed more admissions, not only because they believed their institutions were benevolent and therapeutic, but also because the more the public recognized the serious problem of insanity the more importance and prestige would accrue to the experts who dealt with it. He also considered that the more the public recognized asylum beds to be increasingly available, the more it made use of these as 'dumps for the awkward and inconvenient'. No doubt there is some truth in this this, but we cannot tell how far the patients whom Scull describes as 'the simple-minded and those who had simply given up the struggle for existence' were suffering from what we would now call chronic schizophrenia.

(20) There was a general opinion that, even if the incidence of insanity as a whole was not increasing, that of general paralysis might be (Tuke, 1894). But by 1899 the statistical evidence indicated no increase in the proportion of admissions for general paralysis when compared with total admissions (Commissioners in Lunacy, 1899, p. 5; Board of Control 1923, p. 5). Since almost all admissions for general paralysis may be taken as cases of severe insanity, the absence of a

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decrease in this proportion is a further argument against any disproportionate increase in the admission of milder cases.

(21) There was certainly a gradual increase in the proportion of patients admitted at the age of 65 or over, but not all these had senile dementia. Our best evidence lies in the tables of the Commissioners and of the Board of Control, which give numbers of admissions categorized by form of disorder. Between 1879 and 1913, the proportion of admissions classed as senile dementia (all ages) rose from 4.2 per cent to 5.8 per cent. For age at admission and re-admission with senile dementia etc., see Table VII in The First Report of the Board of Control.

(22) A long-term change in the mania:melancholia ratio can also be seen by comparison of these ratios with those from the early part of the nineteenth century (e.g. Rorie, 1900; Parry-Jones, 1972). The relation between influenza and mental illness was the subject of many papers: see particularly the *Journal of Mental Science* for 1892 and 1893.

(23) In the discussion of Harrington Tuke's Address (1873), Dr Sibbald said, 'the rate of increase thus represented (in Tuke's tables) is so startling that we are at once rendered doubtful as it its reality', for at that rate 'we might expect . . . to reach back to a period when insanity may be said scarcely to have existed at all'. So extravagant a conclusion was one which 'we are fully justified in refusing to accept'.

(24) The common presupposition that, apart from obvious epidemics the principal diseases of medicine have always been with us and in much the same form and severity as now, is perhaps a legacy from the eighteenth century, a time when diseases were considered to be like species and therefore immutable. Much of twentieth-century epidemiology suggests the contrary. The lack of early descriptions of any schizophrenia-like condition is further discussed in Hare (1983).

(25) 'Mental diseases are neither more nor less than nervous diseases in which mental symptoms predominate, and their entire separation from other nervous diseases has been a sad hindrance to progress . . . So long as this is the case, we shall labour in vain to get exact scientific ideas about their causation, their pathology and their treatment.' (Maudsley, 1873).

Acknowledgement

I am indebted to the late Dr Alexander Walk for his advice in the preparation of this paper.

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https://doi.org/10.1192/bjp.142.5.439 Published online by Cambridge University Press