We here review Babylonian descriptions of neurological and psychiatric disorders, including epilepsy, stroke, psychoses, obsessive compulsive disorder, phobias, psychopathic behaviour, depression and anxiety. Most of these accounts date from the first Babylonian dynasty of the first half of the second millennium BC, within a millennium and a half of the origin of writing. The Babylonians were remarkably acute and objective observers of medical disorders and human behaviour. Their detailed descriptions are surprisingly similar to modern 19th and 20th century AD textbook accounts, with the exception of subjective thoughts and feelings which are more modern fields of enquiry. They had no knowledge of brain or psychological function. Some neuropsychiatric disorders, e.g. stroke or facial palsy, had a physical basis requiring the attention of a physician or asu, using a plant and mineral based pharmacology; some disorders such as epilepsy, psychoses, depression and anxiety were regarded as supernatural due to evil demons or spirits, or the anger of personal gods, and thus required the intervention of the priest or ašipu; other disorders such as obsessive compulsive disorder and psychopathic behaviour were regarded as a mystery. The Babylonians were the first to describe the clinical foundations of neurology and psychiatry. We discuss these accounts in relation to subsequent and more modern clinical descriptions.

Keywords: Babylon; epilepsy; stroke; behaviour; psychiatry

Introduction

Western scientific medicine is rooted in Greek and Roman medicine, conveyed and modified by Islamic medicine. Recent research, however, has revealed earlier origins in Mesopotamia (‘the land between the rivers’) and Egypt (Nunn, 1966; Finkel and Seymour, 2008). In the fields of neurology and psychiatry the earliest detailed clinical descriptions can be traced to the first Dynasty of Babylon of the second millennium BC. In the last 25 years we have reported Babylonian accounts of epilepsy (Kinnier Wilson and Reynolds, 1990), stroke and facial palsy (Reynolds and Kinnier Wilson, 2004; Kinnier Wilson and Reynolds, 2007), psychoses of epilepsy (Reynolds and Kinnier Wilson, 2008), obsessive compulsive disorder, phobias and psychopathic behaviour (Reynolds and Kinnier Wilson, 2012a), depression and anxiety (Reynolds and Kinnier Wilson, 2013).

We here present a broader and more comprehensive review of the Babylonian origins and approach to what today we call neurological and psychiatric disorders. One of the authors (J.K.W.) is an Assyriologist and the son of a distinguished neurologist, Samuel...
Alexander Kinnier Wilson (1878–1937); the other (E.H.R.) is a neurologist with interests in psychiatry and history. We first met and began our collaboration in 1987 at a symposium to commemorate Samuel Alexander Kinnier Wilson on the 50th anniversary of his death.

The Babylonian Dynasties

There were several Babylonian Dynasties with their capital at Babylon on the River Euphrates, south-west of modern Baghdad on the River Tigris (Fig. 1). Best known is the neo-Babylonian Dynasty (626–539 BC) associated with King Nebuchadnezzar II (604–562 BC) and the capture of Jerusalem (586 BC). Babylonia was finally overrun and absorbed into the Persian Empire of King Cyrus the Great in 539 BC.

However, the neuropsychiatric sources reviewed here nearly all derive from the first and much longer Old Babylonian Dynasty of the first half of the second millennium BC (circa 1894–1595 BC). This Dynasty was united under King Hammurabi (1792–1750 BC), whose name is also associated with the well-known legal code which is on display in the Louvre Museum in Paris (Fig. 2).

In between the Babylonian Dynasties there arose the Hittite, Kassite and Elamite kingdoms. Throughout this period flourished the northern Assyrian kingdom with its capitals at Assur, Nimrud and Nineveh (Fig. 1), the latter associated with the famous King Ashurbanipal (668–627 BC).

Writing

The Babylonians made important contributions to mathematics, astronomy, law and medicine, conveyed in the cuneiform script, which is thought to have begun in the Uruk region of Mesopotamia in the late fourth millennium BC, roughly contemporary with the earliest known Egyptian hieroglyphs. Figure 3 illustrates the evolution of this script in the third (Sumerian), second (Old Babylonian) and first (neo-Babylonian) millennia BC. Originally linear with the signs being made with a pointed stylus, sometime in the third millennium BC the writing became cuneiform, ‘wedge-shaped’, the scribes now using a three-sided reed, still to be seen in the marshes of southern Iraq, which they impressed onto tablets of soft clay. Cuneiform writing lasted for ~2500 years until Persia was conquered by Alexander the Great, when it was gradually replaced by Aramaic and the use of the simpler alphabetic scripts. The Sumerian and Babylonian languages were eventually deciphered and translated by 19th century European scholars, as illustrated in the right-hand column of Fig. 3 (Oates, 1986).
Medicine and healing

The Babylonians were remarkable observers and documentalists of human illness and behaviour. However, their knowledge of anatomy was limited and superficial. Some diseases were thought to have a physical basis, such as eye and intestinal infections, worms, snake bites and trauma. Much else was the result of evil forces that required driving out, or else was a mystery yet to be understood. A physician, known as an asu, was responsible for physical treatments based on a broad plant- and mineral-based pharmacology, involving herbs, leaves, seeds and, in the case of trauma and surgery, poultices. Thus with a variety of techniques and an impressive *materia medica* the asu would attempt to treat everything from headaches, eye diseases and bad teeth to constipation, worms and urinary infection, as well as draining abscesses and bandaging wounds. Many, perhaps most diseases required the attention of a priest or exorcist, known as an asipu, to drive out evil demons or spirits or to appease personal or communal deities, using rituals, incantations and prayers together with ointments and amulets (Biggs, 1969; Kinnier Wilson, 1996; Finkel and Seymour, 2008).

The main corpus of Babylonian medical texts includes two major collections known as the ‘diagnostic’ series and the ‘therapeutic’ series of Tablets (Labat, 1951; Köcher, 1967; Herrero and Sigrist, 1984; Kinnier Wilson and Reynolds, 1990). The former series provide the symptoms of named diseases including prognoses in some, and often implying causation, whether physical or supernatural. The latter series record and classify many hundreds of prescriptions or recipes, usually listed from head to foot on multi-column tablets, providing the practitioner with a reference library of treatments for specific symptoms or diseases. Collectively the two series may be viewed as ‘textbooks’ of Babylonian medicine and treatment.

This article is concerned with Babylonian descriptions of what in modern terms we refer to as neurological and psychiatric disorders. For a broader view of Babylonian medicine, the reader is referred to Scurlock and Andersen (2005), Finkel and Geller (2007) and Finkel and Seymour (2008).
Babylonian accounts of neurological and psychiatric disorders

It must be emphasized that the Babylonians would have had no understanding of our modern concepts of neurological and psychiatric disorders. They knew nothing of brain or psychological function. They simply documented many remarkably detailed and objective descriptions of what in retrospect we can clearly recognize today as neurological and psychiatric disorders, a system of classification that would have been meaningless to the Babylonians. Although a few disorders, for example, what we call stroke, were suspected to have a possible physical basis or component, requiring treatment by an asū, most were viewed as supernatural, needing the attention of an ašipu. A few disorders or behaviours were recorded as mysterious, yet to be understood, revealing a surprisingly open-minded approach.

It must also be stressed that Babylonian medicine was a science formulated before the coming of pathology, the latter undoubtedly being a major contribution of Greek and Roman medicine. As the dictionaries confirm there was as yet no word for ‘nerve’, and even the concept of ‘muscle’ was represented alone by the term širu i.e. ‘flesh’. The concept of ‘mind’ was not current either, so that what is today broadly regarded as mental disorders were in large part observed as disorders of behaviour. Indeed, a phrase šint tēmi meaning ‘change of mood’ or ‘change of temperament’ probably expressed this aspect of behavioural disorder. A second category of ‘ideas of influence’ may be recognized, mainly from witches and various ‘persecutors’; and the verb rede, ‘to persecute’ is not uncommon in some texts. To combat these conditions the ašipu had resource only to various rituals and incantations, but interestingly, several of the psalms, e.g. 65, in the Old Testament seem to belong to the same concept of the confrontation of persecutors (Kinnier Wilson, 1965).

In the following illustrations from our studies we indicate the Babylonian conception and we expand on our modern interpretation in the general discussion. In the neurological and psychiatric descriptions that follow it is important to understand the Babylonian ‘textbook’ approach in accounts that begin with: ‘if a man...’. This is a general and all embracing statement applying not just to one man, but a summary view of the total clinical picture as observed in many cases.

Neurological disorders

Epilepsy

We first studied a Babylonian tablet in the British Museum (BM 47753), number 26 of 40 in the ‘diagnostic’ series, wholly concerned with epilepsy (Kinnier Wilson and Reynolds, 1990) (Fig. 4). The Babylonian word for the falling sickness or epilepsy is miqtu. The tablet describes in accurate detail most of the common seizure types we recognize today, some of which we illustrate below, and even rare types such as a gelastic seizure (obverse, line 11). Also described are prodromal symptoms, auras, post-ictal phenomena, provocative factors (such as sleep and emotion), and interictal emotional disturbance. There is even also a section on temporal or prognostic aspects of epilepsy.

Throughout the text, the Babylonian conception of epilepsy as a supernatural disorder due to invasion of the body by evil demons or spirits is evident, sometimes with individual names for the spirits associated with particular seizure types. The first line (obverse) of the text states:

‘If epilepsy falls once upon a person [or falls many times] it is the result of possession by a demon or departed spirit.’

For the Babylonians there seemed to be no doubt whether a single seizure was epilepsy. Every attack whether solitary or multiple, was the result of possession.

The following account of a unilateral focal motor seizure, which today we call ‘Jacksonian’, illustrates the accurate attention to clinical detail by Babylonian scholars:

‘If at the time of his possession, while he is sitting down, his (left) eye moves to the side, a lip puckers, saliva flows from his mouth, and his
hand, leg and trunk on the left side jerk (or twitch) like a newly-slaught-
tered sheep it is miqtu. If at the time of the possession he is consciously
aware, the demon can be driven out; if at the time of the possession he
is not so aware, the demon cannot be driven out’ (BM 47753, reverse,
lines 1–3).

Babylonian physicians were obviously aware that the early
motor components of the episode can proceed to loss of con-
sciousness, when it became harder to drive out the demon.
Today we do not drive out demons, but some practitioners use
biofeedback during the conscious phase in an attempt to inhibit
progression with equivocal and unconfirmed benefit (Thompson
and Baxendale, 1996).

The Babylonians were also aware of status epilepticus, with the
serious potential consequence of death:

‘If an epilepsy demon falls many times upon him and on a given day he
seven times pursues and possesses him, his life will be spared. If he
should fall upon him eight times his life may not be spared’ (BM
47753, obverse, line 6).

Although today we would not regard the number seven as cru-
cial in the prognosis of status epilepticus, to the Babylonians and
other ancient cultures seven was a sacred number with supernat-
ural significance.

Finally an example of an elaborate automatism in the context of
a complex partial seizure and/or post-ictal state:

‘If he keeps going in and out of his house or getting in to and out of
his clothes—or talks unintelligibly a great deal, does not any more eat his
bread and beer rations and does not go to bed—hand of the goddess
Ishtar’ (BM 47753, reverse, lines 19–20).

This is an example of a named supernatural influence.
In a subsequent study of several ‘diagnostic’ tablets, including
26, Stol (1993) incorporates our own clinical interpretations of the
Epilepsy tablet.

**Stroke**

Tablet 27 in the ‘diagnostic’ series is in the Louvre in Paris
(A06680) and is concerned with stroke, the Babylonian word for
which is *Şipir misitti* (Reynolds and Kinnier Wilson, 2004; Kinnier
Wilson and Reynolds, 2007). The first line of the text states:

‘If a man is suffering from facial paralysis and half of his body is paral-
ysed it is “stroke”.’

The Babylonians recognized the unilateral nature of stroke
involving limbs, face, speech and consciousness. They distin-
guished the facial weakness (‘mouth paralysis’) of stroke from
that of uncomplicated unilateral facial paralysis, which is known in
modern terminology as Bell’s palsy. The four relevant texts are
specified in Kinnier Wilson and Reynolds (2007, pp. 81–82) and
begins:

‘If a man has a flaccid paralysis of the face, his affected eye deviates
from the other and day and night remains open…’.

The tablet also reveals awareness of the variable prognoses of
stroke from persistent disability and death to recovery within 2 or
3 days, sometimes with persistent headache. It is doubtful if the
Babylonians recognized transient ischaemic attacks, not least be-
cause they had no way of expressing small units of time, such as
seconds or minutes.

Although the treatment of epilepsy was the province of the
priest or *asıpu*, stroke belonged to both the natural and supernat-
ural healers, who sometimes collaborated in administering to the
patient. This may be because the Babylonians recognized that par-
alysis could sometimes result from physical causes, such as snake
bite or scorpion sting. Physical treatments included massage, hot
poultices and bandaging of limbs, as well as various oral plant-
based prescriptions and possibly rehabilitation in the form of a
crutch.

**The spinal cord**

Before leaving neurological disorders we draw attention to the
beautiful bas-relief in the British Museum of a wounded lioness
from an Assyrian Palace in Nineveh (Fig. 5). Although they had no
knowledge of the spinal cord the Babylonians and the Assyrians
clearly understood that an arrow in the centre of the back led to
paralysed hind legs, another important clinical observation.

**Psychiatric disorders**

Our knowledge of Babylonian descriptions, understanding and
treatment of psychiatric disorders is derived from various tablets
and texts unrelated to the medical ‘diagnostic’ and ‘therapeutic’
series, but again probably dating from the first half of the second
millennium BC (Kinnier Wilson, 1965, 1967). Two major cuneiform
texts known as *Maqlû* and *Shurpu*, respectively provide the main
but not exclusive sources of Babylonian psychiatry. They corres-
pond broadly and respectively with modern concepts of psychoses
and neuroses and may represent the first awareness and docu-
mentation of what we call mental illness.
Psychoses, including psychoses of epilepsy

Maqlû is an abbreviated title meaning literally ‘(The) burning’. It is largely concerned with paranoia and delusions of persecution, the procedure against this being that the priestly doctor, or ašīpu, would burn or melt images of wood or wax before the patient in an attempt to release the persecutors from his mind by sympathetic magic, the technical modern term. The persecutors were of many kinds and included the vague bēl lemutti or ‘evil doer(s)’, but more prominent was the ‘witch’, kašāpitu, a figure who features also in ideas of influence and passivity. As medically conceived the magical spells cast by the witch were probably the historical antecedents of those radiowaves etc from modern technology that influence psychotic patients today (Kinnier Wilson, 1967). It should be added, however, that a totally anthropological view of the witch has been adopted in the many papers of Abusch now collected in Abusch and Schwemer (2011).

We have also studied a remarkably comprehensive account of psychoses of epilepsy from texts belonging to the British Museum and the Berlin National Museum (Reynolds and Kinnier Wilson, 2008). Here the Babylonians are clearly observing and describing what today is known as an interictal or schizophrenia-like psychosis of epilepsy. The two texts, discussed by Kinnier Wilson (1965, p. 291) may be translated:

‘If a man has been suffering from seizures, absence attacks, nocturnal epilepsy or automatism, and an (or, possibly, the) evil demon then begins to inflict him with (ideas of) persecution so that he says—although no one will agree with him that it is so—that the finger of condemnation is being pointed at him behind his back and that god or goddess are angry with him; if he sees horrible, alarming, or immoral “visions” and is (consequently) in a constant state of fear; if he engages in periodic outbursts of anger against god or goddess, is obsessed with delusions of his own mind, evolves his own religion, and says—although (again) they will not allow it—that his family are hostile towards him and that god, king, his superiors and (city) elders treat him unjustly … and he has no desire for female relationships …’.

Obsessive compulsive disorder and phobias

In Shurpu the Babylonians carefully documented, but were mystified by, obsessive compulsive disorder and phobias (Reynolds and Kinnier Wilson, 2012a). Thus for example: Shurpu II, lines 83–103:

‘Be it (the mystery) resolved in that he does not know why he is compelled to take (things), to hide (things) … to point the finger (of condemnation) at a protecting deity … to step in blood or walk about over a place where blood has been shed … (or why) he has a phobia of meeting an accused person or of an accused person meeting him, or of sleeping in the bed, sitting in the chair, eating at the table, or drinking from the cup of an accused person …’.

And again: Shurpu II, lines 105–125:

‘Be it (the mystery) resolved in that he does not know why he has a (morbid) fear of beds, chairs, tables, lit candles, lamps, etc … of leaving or entering (such and such) city, city gate or house or of (such and such) a street, temple, or road.’

Psychopathic behaviour

The Babylonians were equally mystified by psychopathic behaviour, also described in Shurpu (Reynolds and Kinnier Wilson, 2012a). Thus, for example: Shurpu II, lines 37–61:

‘Be it (the mystery) resolved in that so-and-so does not know it is wrong … when he gives with a small measure … uses a false balance … takes money not lawfully his … sets up a false boundary stone—enters a friend’s house, has intercourse with his friend’s wife, sheds his blood, and steals his clothes … when his mouth says ‘yes’ but his heart says ‘no’ and whatever he says is completely untrue; when he shakes and trembles (with rage), destroys (things), throws them out (of the house) or makes them disappear; when he accuses, incriminates, spreads gossip, wrongs, robs, or invites others to rob …’.

Although the Babylonians seem to have a healthy open mind about the causes of obsessive compulsive disorder, phobias and psychopathic behaviour and they did not blame deities, demons or physical forces, they did unite all three diagnostic categories around a concept of the mâmintu idea. The word mâmintu means ‘oath’ and it appeared to them that the behavioural habits were so unbreakable that the observed action was as if the subject had sworn an oath to do or not to do the action involved (Reynolds and Kinnier Wilson, 2012a).

Depression and anxiety

The text known as BAM 234, published in copy by Köcher (1967), does not belong to the main body of medical or psychiatric texts (Reynolds and Kinnier Wilson, 2013). It is uncertain whether it describes a single case involving one ‘head of a household’ or, in the usual Babylonian medical tradition, the complete clinical picture derived from the observation of many subjects. The translation reads from line 1:

‘If an awîlum (or head of a household) has had a (long) spell of misfortune—and he does not know how it came upon him—so that he has continually suffered losses and deprivation (including) losses of barley and silver and losses of slaves and slave girls, and there have been cases of oxen, horses, sheep, dogs and pigs, and even others in his household, dying off altogether; if he has frequent nervous breakdowns, and from constantly giving orders with no (one) complying, calling with no (one) answering, and striving to achieve his desires while having (at the same time) to look after his household, he shakes with fear in his bedroom and his limbs have become weak to an extreme degree; if he is filled with anger against god and king; and if he is sometimes so frightened that he cannot sleep by day or night and constantly sees disturbing dreams; if he is weak (from) not having enough food and drink; and if (in speech) he forgets the word which he is trying to say; then the anger of (his) god and goddess is upon him.’

The condition was viewed as serious, resulting from the anger of his personal god and goddess. This required the spiritual services of an ašīpu and a ritual appeal to a higher communal god, in this case Shamash, the god of justice.
The Babylonians did not have a single word for the disorder they objectively describe. The concept of ‘depression’ either as a symptom or as a clinical entity would not have been known to them. The Babylonian noun asšuštu, i.e. ‘distress’, might perhaps have included ‘depression’ but had a wider meaning (Reynolds and Kinnier Wilson, 2013). A millennium later it was the Greeks who introduced the term ‘melancholia’ and this was only recently abandoned in favour of ‘depression’ in international classifications in the late 19th and early 20th centuries AD (Jackson, 1986; Reynolds and Kinnier Wilson, 2013).

Discussion

We have endeavoured to construct an overview of Babylonian descriptions, concepts and treatment of what, in modern terms we call neurological and psychiatric disorders. On a brief background of Babylonian history and culture we have illustrated this review with examples from our original translations of Babylonian accounts of epilepsy, stroke, psychoses, obsessive compulsive disorder, phobias, psychopathic behaviour, depression and anxiety, dating mainly from the first half of the second millennium BC.

As we have indicated, the Babylonians had no systematic classifications of their own and would not have understood our modern diagnostic categories. Their great achievement, within about a millennium and a half of the origin of writing, was to observe and document in remarkable detail the objective phenomena of human illness and behaviour, leaving no doubt that they were describing many of the same common clinical disorders that we see today.

The descriptions, for example, of epilepsy include most of the common seizure types that we recognize today i.e. tonic clonic, absence, complex partial, focal motor, and even rare types such as a gelastic seizure. Also included are provocative factors, prodromal symptoms, auras, post-ictal phenomena and what we call status epilepticus. There are early attempts at prognosis, especially with regard to status, which they recognized could lead to death.

The Babylonians clearly described the unilateral nature of stroke, involving limbs, face, speech and consciousness. They distinguished the facial weakness of stroke from that of isolated facial weakness, which we call Bell’s palsy. They recognized the variable prognoses of stroke, from death to partial or complete recovery. They did not and perhaps could not describe what we call transient ischaemic attacks as they had no method of expressing small units of time such as seconds or minutes. The distinction between transient ischaemic events and some epileptic seizures would have been difficult, as it can be today.

With their limited knowledge of anatomy they were probably unaware of the spinal cord but documented visually how an arrow in the middle of the back of a lioness can lead to paralysis of the hind legs (Fig. 5). We have not located so far any detailed account of the clinical effects of head trauma.

The Babylonians were also well aware of paranoia and delusions of persecution, usually from witches or other evil doers. In modern psychiatry the concept of psychoses of epilepsy was developed in the 19th century but only fully crystallized in the mid-20th century with the seminal studies of Slater et al. (1963). But, remarkably, the Babylonian text also describes most of these classical clinical symptoms, including paranoid delusions, hallucinations, emotional instability with impulsive acts, as well as religiosity and hyposexuality, both relatively recent additions to the modern clinical concept.

The obsessive behaviour described by the Babylonians in Shurpu includes such modern categories as contamination, orderliness of objects, aggression, sex and religion (Rachman and Hodgson, 1980; Reynolds and Kinnier Wilson, 2012a). Interestingly, however, the Babylonian accounts are entirely objective and do not include subjective descriptions of obsessional thoughts, ruminations or the subjects attitude to their own behaviour, which are more modern fields of enquiry (Reynolds and Kinnier Wilson, 2012a).

Babylonian scholars were obviously fascinated and perplexed by what we now call psychopathic behaviour, as indeed we are today, despite some limited advance in our modern understanding. Again the behavioural accounts are entirely objective and include the liar, the cheat, the thief, the troublemaker, the sexual offender, the immature delinquent and social misfit, the violent and even the murderer.

The modern psychiatrist will also recognize a remarkably accurate description of an agitated depression with biological features including insomnia, anorexia, weakness (and probably weight loss), impaired concentration and memory. As in the case of obsessive compulsive disorder the author does not describe subjective thoughts or feelings of sadness, but does observe dejection, fear and agitation, possibly panic attacks, which led to the initial interpretation as an anxiety state (Ritter and Kinnier Wilson, 1980). The original sufferer seems to be the head of a household, a wealthy landowner with a large staff, somewhat equivalent to the ‘Lord of the Manor’ in feudal England. There were many provocative factors including loss of staff, animals, crops and income, together with personal frustrations and thwarted ambitions.

The Babylonian interpretation and treatment of the above neuropsychiatric disorders and behaviours that they observed and recorded in such careful detail 3500 to 4000 years ago were, understandably, quite different from our own. As already mentioned, they did recognize physical causes for some medical diseases. However, perhaps because they had no knowledge of brain (or psychological) function most of the above neuropsychiatric disorders were viewed as supernatural. The main exception was stroke, which was suspected, at least in part, to have a possible physical explanation, perhaps because they recognized that paralysis could sometimes result from other physical causes such as snake bite or scorpion sting. Although the physical basis of stroke was unknown and supernatural causes were also entertained, treatment was often a collaborative effort between the physician or asū, with methods already described, and the priest or asšipu. The treatment of seizures, paranoid psychoses and depression were clearly the province of the asšipu, again by methods we have summarized. The Babylonians seemed to have an open mind about obsessive compulsive disorder, phobias and psychopathy, which they refer to as a mystery yet to be resolved. They did, however, consider that in all three situations the subjects seemed to behave as if they had sworn an oath to act or not to
act in the apparently unbreakable habit observed. Whether the sufferers were subjected to treatment or perhaps punishment is not recorded.

From the perspective of a modern neurologist or psychiatrist these ancient objective descriptions of neuropsychiatric phenomenology suggest that the Babylonians were observing some of the common neurological and psychiatric disorders that we recognize today. Epilepsy and stroke are common neurological disorders now as they were in Babylon. When the first neurological hospital was established in London in 1860 it was called the National Hospital for the Paralysed and Epileptic. Depression and psychoses are likewise central to modern psychiatric practice and were clearly known to the Babylonians. Of course epidemiology did not exist in Babylon but it is fair to infer that much that is common in neuropsychiatry today was known and described in impressively accurate detail by Babylonian scribes.

One major and intriguing omission from these entirely objective Babylonian descriptions of neuropsychiatric disorders is the absence of any account of subjective thoughts or feelings, such as obsessional thoughts or ruminations in obsessive compulsive disorder, or suicidal thoughts or sadness in depression. These latter subjective phenomena only became a relatively modern field of description and enquiry in the 17th and 18th centuries, possibly because central to modern psychiatric practice and were clearly known to the Babylonians. Of course epidemiology did not exist in Babylon but it is fair to infer that much that is common in neuropsychiatry today was known and described in impressively accurate detail by Babylonian scribes.

Babylonian medical texts, including those here concerned with neurological and psychiatric disorders, were lost sight of until the language was deciphered and translated by 19th century European scholars. There is nothing comparable to these detailed clinical descriptions in the Egyptian literature, certainly in the fields of neurology and psychiatry (Nunn, 1996). Although the Greeks had little understanding of the cuneiform script, Babylonian culture, including medicine, no doubt influenced Greek and Roman culture and medicine, not least because it may be assumed the treatment methods were carried forward at least locally in the Near East by oral tradition (Finkel and Seymour, 2008). The Greeks and Romans did, however, introduce new natural interpretations of epilepsy and behaviour based on the four humours and a limited knowledge of the brain and pathology. Melancholia, associated with and meaning ‘black bile’, is a good example. But their clinical descriptions of neuropsychiatric disorders were fragmentary and not as detailed and comprehensive as those of the Babylonians. Furthermore supernatural theories of neuropsychiatric disorders continued to dominate practice right up until the 17th and 18th centuries AD, when brain theories first began to take root (Hunter and Macalpine, 1963; Spillane, 1981; Berrios and Porter, 1995; Reynolds and Kinnier Wilson, 2013). To our knowledge it was only in the 18th and 19th century European literature that clinical descriptions comparable to that of the Babylonians re-emerged, reinforced now by neuropathology and, later, by psychopathology.

In modern medicine accurate observation and description are the first steps in the recognition of different categories of clinical abnormality. The remarkably complete clinical accounts that we have studied and reviewed indicate that the Babylonians were the first to describe the clinical foundations of modern neurology and psychiatry.

**Funding**

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

**References**


