



Mesopotamian Medicine and Religion: Current Debates, New Perspectives

Eleanor Robson*

Department of History and Philosophy of Science, University of Cambridge

Abstract

The study of Mesopotamian medicine, while unprecedentedly productive, is stuck in a historiographical rut that cognate disciplines left some years ago. I review the current state of the field from a peripheral vantage point and use case studies from Sumerian literature and Neo-Assyrian royal letters to exemplify alternative approaches that do not sacrifice philological rigour for anthropological attention to socio-intellectual context.

Introduction

Mesopotamia – the land between the Tigris and Euphrates rivers, centred on modern-day Iraq – is a uniquely rich source for the history of ancient medicine. As Laura Zucconi (2006) reminds us, there are no more than a dozen surviving Egyptian medical papyri, while the Hippocratic and Galenic traditions are witnessed only by *n*th-generation medieval and later copies that have passed through many editorial hands and often one or more change of language (Nutton 2004, pp. 1–9). By contrast the almost imperishable cuneiform tablets of ancient Mesopotamia, written in the Sumerian and Akkadian languages with a reed stylus on clay, survive in their hundreds of thousands, often excavated within a meaningful archaeological context. They potentially give modern researchers extraordinarily direct access to the words, thoughts, and practices of those who lived, worked, suffered, recovered, and died in the Middle East some 4500–2000 years ago. As well as ‘medical texts’ narrowly defined – recipes and instructions, incantations and rituals, omen collections, lists of *materia medica* – a range of other textual, visual, and material evidence is available to draw on. Literary works, letters, and administrative records; amulets, figurines, and imagery on other objects; even buildings such as temples and libraries, as well as the osteopathological examination of human remains: all can yield important information on the theories and practices of Mesopotamian medicine. Yet despite – or perhaps even because of – the overwhelming volume and potential of this dataset, the subject remains noticeably underdeveloped in comparison to studies of the medicines of

other ancient cultures, and to the other intellectual disciplines of the cuneiform world.

Throughout the twentieth century the number of publications on Mesopotamian medicine grew literally exponentially (Heeßel 2000, pp. 385–401). Since then, the publication rate has continued to increase (Heeßel 2005a): monographs, collected essays, and journal articles on the subject have been appearing at an unprecedented rate while the *Journal des Médecines Cunéiformes* has passed its fifth year of publication. Yet, with some notable exceptions, the primary research emphasis is still on the close philological analysis of individual ‘theoretical’ writings – recipes, omens, rituals – as a coherent, static, self-contained body of work. Though magic is often seen to be a cognate branch of Mesopotamian knowledge and practice, medicine is rarely studied in the wider context of intellectual thought and more rarely still in any broader socio-political framework. In particular – given the remit of this essay – the religious aspects of Mesopotamian medicine are conspicuous by their absence from recent discussions. Indeed Nils Heeßel and Hector Avalos – two of the ‘notable exceptions’ to this isolationism – have lately both been fiercely critical of the state of the field (Heeßel 2004; Avalos 2007).

Recent work in the anthropology and history of medicine has had little impact on Assyriologists, although it has much to offer. For instance, Byron Good (1994) gives a rich account of the ways that moral, aesthetic, and discursive practices shape the meaning and experience of suffering. Andrew Strathern and Pamela Stewart (1999) explore the often complex relationships between curing, healing, and ritual in traditional and bio-medical systems worldwide. John Janzen (2002) takes a semiotic approach to examine the interplay between personhood and the social body in sickness and in health. Helaine Selin (2003) brings together a stimulating variety of historical and anthropological accounts of ethnomedicine. Helen King (2001), Geoffrey Lloyd (2004), and Vivian Nutton (2004) give contrasting overviews of Greco-Roman medicine. King sketches a swift and lively overview for absolute beginners; elsewhere she also has fascinating insights into the social construction of gendered bodies, and on pain (1998). Nutton presents an in-depth study of practitioners in Hippocratic, Galenic, and other traditions; Lloyd explores images and ideas of illness and madness across the spectrum of Greek literary culture.

I am no expert in Mesopotamian medicine *per se* but a social historian of other aspects of cuneiform intellectual culture – although I do offer a short course on Mesopotamian medicine to undergraduate medics and scientists as part of a longer team-taught lecture series on the history of premodern medicine. In this review, then, as a peripheral participant in the field, I draw together a variety of recent publications in Assyriology and the history and anthropology of science with the aim of putting some of the hottest debates and more neglected topics into broader perspective. First, however, I review the material available, and the current literature

on it, with the aim of constructing a basic referential framework in which to situate the rest of the article (see also Biggs 1990).

Sources for the History of Mesopotamian Medicine

As I noted in the first paragraph, there are about ten different types of evidence for the theories and practices of Mesopotamian medicine, ranging in date from the mid-third millennium to the final centuries of the first millennium BCE. They mostly give voice to the ideas and concerns of professional practitioners, rather than their patrons, patients, or clients – and an elite, urban, literate, male subset of those practitioners at that. Just as in the classical world, the work of experts such as bone-setters, barber-surgeons, midwives, and herbalists mostly goes unrecorded, as do a whole range of domestic, rural, and informal healthcare practices that surely must have existed in Mesopotamia as in every society worldwide.

The earliest known medical recipes are from the third-millennium city of Ebla (Fronzaroli 1998; Bonechi 2003). A few also survive from the Ur III period, or twenty-first century BCE (Civil 1960, 1961). Incantations against physical and mental ailments were recorded from the third millennium onwards (Michalowski 1993; Cunningham 1997; Van Dijk & Geller 2003) and became organised into increasingly standardised groupings in Old Babylonian times, the early second millennium BCE (Wasserman 2007). But the large majority of witnesses to both genres, along with ritual instructions for enacting them, date from the seventh to second centuries BCE. The late Franz Köcher systematically catalogued and copied nearly 600 manuscripts of recipe collections and related texts from Assyria and Babylonia (Köcher 1963–80) but died before his translations and commentaries could be put into print. The current generation of scholars is now working through this massive dataset – and adding to it – to produce scholarly editions of recipes. The most popular strategy is to collect together recipes for particular types of ailment from many sources (e.g., Fincke 2000; Geller 2005; Scurlock 2006a) but there are also systematic studies of entire tablets (e.g., Worthington 2005, 2006, 2007). A second major endeavour has been to incorporate them into studies of particular aspects of Mesopotamian healing practices (e.g., Reiner 1995; Stol 2000; Scurlock & Andersen 2005). Several major ritual series and subgenres have recently been studied or edited (e.g., Farber 1989; Wiggermann 1992; Schramm 2001; Abusch 2002) as have a large number of stand-alone incantations (e.g., Maul 1994).

The recipes tend to be grouped and ordered according to the body part they are supposed to heal, and secondarily by affliction – rather than, say, by their active ingredients. Those ingredients were mostly local plants and plant derivatives, but could also include animal and mineral products. They could be mixed, prepared, and administered in a variety of ways, often involving ritualised actions and symbolic utterances (Herrero 1983;

Reiner 1995, pp. 25–42). Ritual series, such as *Šurpu* ‘Burning’ (Reiner 1958) and *Bīt Rīmki* ‘Bath House’ (Laessle 1955), tend to describe the entire performance on one tablet and give the words of the incantations on several accompanying ones. Many instructions call for a mixture of therapeutic materials, ritualised actions, and symbolic words to be used in the preparation of treatments and in their administration and disposal.

According to later tradition, during the reign of king Adad-apla-iddina (r. 1068–1047 BCE), a Babylonian scholar called Esagil-kin-apli compiled a compendium of some 3000 omens in 40 standardised tablets, to help medical practitioners make diagnoses (mostly concerning the divine origins of illness) and prognoses (Heeßel 2000, 2004). Surviving ancient catalogues of *Sakikkû* ‘Symptoms’ show that it was grouped into six subseries. The first interprets observations made en route to visit the patient, incorporating elements of the older terrestrial omen series *Šumma Ālu* ‘If a city’ (Heeßel 2001–2); the second and longest gives portents based on a systematic head-to-toe observation of the patient; the third concerns the duration of the illness. The final three sections deal with specific complaints such as epilepsy and gynaecological problems (Stol 1993, 2000, pp. 193–203). Perhaps half of the total series is currently known. Learned commentaries that justified the correlations between observation and prognosis, and extracted further meanings from them, were also written (George 1991). A shorter collection of omens pertains to the physiognomy and speech habits of individuals (Böck 2000).

Listing and classification were skills taught to every literate Mesopotamian, through the rote learning of signs, words, and spellings as a central part of their scribal education (Veldhuis 1996; Gesche 2000). Not surprisingly, first-millennium medical practitioners also used listing as a strategy to organise their knowledge. The names and properties of medical ingredients, especially plants and stones, were described in standardised series such as the synonym list *Uru Ana = Maštaka* ‘(The Sumerian plant name) Heavenly City = (the Akkadian plant name) . . .’ (Kinnier Wilson 2005) and *Abnu Šikinšu* ‘A stone whose nature is . . .’ (Schuster-Brandis 2003), as well as in *ad hoc* lists (e.g., Spar & Lambert 2005, no. 32). We have already seen that the omen series *Sakikkû* was catalogued in ancient times; the entire corpus of *āšipūtu*, or works that were supposedly the concern of the *āšipu* scholar, were also given a canonical listing, attributed to the long-ago redactor of *Sakikkû*, Esagil-kin-apli. This so-called *Āšipu’s Handbook* was copied from at least the seventh to the fourth centuries BCE, in both Assyria and Babylonia (Jean 2006, pp. 62–82).

Several scholarly libraries of cuneiform tablets that include a wide range of medical works have been excavated over the years, but not all have been fully published. From seventh-century Assyria there are not only the vast royal libraries of Nineveh (e.g., Fincke 2003–4) but also the tablets from the temple of Nabu, god of wisdom, at nearby Kalhu/Nimrud (Wiseman & Black 1996), the family collection of an *āšipu* called

Kišir-Aššur in Assur (Pedersén 1986, pp. 41–76) and the dumped leftovers of a priestly family's tablets at far-away Huzirina/Sultantepe in modern Turkey (Gurney & Finkelstein 1957; Gurney & Hulin 1964). Two successive *āšīpus*' libraries from a single house in Uruk, belonging to the Persian-period Šangu-Ninurta family (c.420 BCE) and the early Seleucid Ekur-zakir family (c.310 BCE), have been fully edited (Hunger 1976; von Weiher 1983–98) but are often treated as a single entity (e.g., Jean 2006, pp. 161–4). An assemblage of tablets written in the course of medical training in late first-millennium Ur has also been published recently (Finkel 2005). However, none of these rich resources has yet been fully exploited for the information they could yield about such matters as the range of individual families' medical and larger intellectual interests, education and apprenticeship, and the shifts in healing practice, theory, and social status across time, space, and political change (but see Böck 2003; Heeßel 2005b; Clancier et al. 2007–).

Beyond the scholarly, professional writings of the practitioners and their apprentices there is also a great deal more written evidence about health and suffering, the afflicted and those charged with curing them. Numerous hymns appeal to deities such as Ninisina, Gula, and Ištar for the relief of suffering; epic and mythological narratives, from *Lugalbanda* to *Gilgameš*, describe illness and recovery, or death. Administrative and legal records help to situate healers in their institutional and familial contexts (e.g., d'Agostino 2003; Jean 2006, pp. 172–94), while letters to, from, and about medical professionals give immediate but allusive snapshots of healthcare in practice (see below). Cylinder seals, amulets, and votive objects are further concrete evidence of appeals for divine intervention in illness or the maintenance of health (e.g., Heeßel 2002; Ornan 2004). The archaeological remains of buildings such as the temples of healing deities, royal libraries, and scholars' family homes could also be adduced as places of medical learning, if not necessarily of practice. Finally, osteopathological approaches to human remains can yield evidence of disease incidence in the ancient population, as well as particular therapeutic interventions on individual bodies (Larsen 1997; Mays 1998; Roberts 2002). However, for Mesopotamia such studies rarely move beyond archaeological site reports into the historical mainstream.

There are gaps, even among this impressively wide evidentiary base. There is no evidence for the acquisition of raw materials: were herbs grown in physic gardens by the healer, gathered from the wild, and/or purchased from specialist collectors? At the moment we can only guess. We know of no case histories, as in the Hippocratic or Buddhist corpora (e.g., Lloyd 2004, p. 42; Zysk 1991, p. 71). Neither are there any obvious instructions on diet, exercise, and climate as in so many other premodern medical traditions. And, typically for Mesopotamian scholarship, there are no treatises that present an overarching theoretical view of the functioning of the body (e.g., Galenic humoral medicine and its many spin-offs

worldwide). Nevertheless, this rich and varied body of data is ripe for analysis in many different ways. How are historians of medicine currently treating it and how else might they be approaching their subject?

Historiographies and Methodologies in the Study of Mesopotamian Medicine

What do historians of Mesopotamian medicine think they are doing? Nils Heeßel and Hector Avalos have recently identified three crucial methodological debates, which can be roughly characterised as a set of oppositions: illness or disease? (Heeßel 2004, pp. 5–7); rationale or (ir)rationality? (Heeßel 2004, pp. 7–8); conservatism and coherence or innovation and variety? (Avalos 2007, pp. 135–6). But there are also other historiographical issues that could benefit from more open discussion, which can perhaps be broadly considered as the question of primitivism versus presentism. To put it bluntly, were the ancients irredeemably backward, or were they really just like us? Rather than rehearsing Heeßel and Avalos's arguments, or those of others in the debate (e.g., Attia & Buisson 2004; Coleman 2005), let us consider the matter of translating the technical terms of ancient medicine to explore some of these ideas in more detail.

Edition and translation are the primary activities of medical Assyriology at the moment, perhaps because it is felt that historical analysis should wait until more data is available. But translations are not themselves value-free; interpretations are built into every word we choose. Here, for instance is king Esarhaddon's chief *asû*, Urad-Nanaya, denigrating the palace staff's medical competence in c.670 BCE (Parpola 1993, no. 322, rev. 7–13):

li-ip-pi / am-mu-te i-na la mu-da-nu-te / i-na-ši-u ina UGU / na-ah-na-he-e-te ša ap-pi / ú-mu-du : na-ah-na-hu-tú / ú-da-ú-pu : TA pa-ni / MÚD.MEŠ ú-šu-u-ni

They are handling those tampons ignorantly! They put them against the cartilage of the nose, pressing the cartilage, and that is why the blood keeps coming out. (Parpola 1993, p. 260)

The word *nahnahūtu* is attested in this passage and nowhere else; there is no independent means of verifying whether 'cartilage' is the correct translation for this word. Thus, whether the translator chooses this word or another part of the nose depends on his or her assumptions about the anatomical knowledge of the ancient author. And then in the secondary literature that choice of translation may be adduced as evidence for Urad-Nanaya's anatomical knowledge (rather than acknowledged as the translator's best guess). Rational reconstructions, however plausible, are ultimately dangerously circular.

Words that are more abundantly attested can be no less risky. Identifying health threats to the ancient Mesopotamian population is an obvious desideratum if we are to understand how healers and their clients tackled

them. Mesopotamian medical writings are full of technical terms for the afflictions suffered by patients. Leaving those terms untranslated can render the texts virtually meaningless; yet attempts to find translations can run into major methodological problems. Most recently, for instance, there have been two philological studies of the term *di'u*. Both Marten Stol (2007) and James Kinnier Wilson and Irving Finkel (2007) agree that *di'u* was a summer affliction, which could be epidemic, and which affected the head. Stol, using passages from *Sakikkû* and diviners' *tāmītu* prayers, tentatively identifies it with malaria, while Kinnier Wilson and Finkel, citing the Sumerian epic *Lugalbanda* amongst other literature, argue instead for heat stress. But how reliable is the retrospective diagnosis of ancient maladies? And is it legitimate to treat all attestations of a word, whether from literary works of the early second millennium BCE or from the divinatory tradition a thousand years later, as having equal evidentiary weight? I think not. The semantic range of words, in any language, shifts over time – as, for instance the English word malaria, from Italian 'bad air':

1. Originally [attestations from 1740]: an unwholesome condition of the atmosphere attributed to marshy districts of Italy and other hot countries; any febrile disease thought to be caused by this. Now [attestations from 1898]: *spec.* any of a group of diseases of humans and other vertebrates caused by protozoans of the genus *Plasmodium* (phylum Apicomplexa), which are transmitted by mosquitoes and parasitize red blood cells, resulting in haemolysis, periodic fever, and various other symptoms.
2. *fig.* A malign influence. *Now rare* [attestations 1825–62; 2002].¹

The *Oxford English Dictionary's* careful use of quotations in context allows the shifting meanings of 'malaria' – from both an illness and its supposed source to a technical definition of a disease and its carrier – to be precisely mapped over the course of a few centuries and across different genres of text. Not surprisingly, the figurative use of 'malaria' occurs more frequently in literary contexts than medical ones. The lexicography of ancient medicine should be no less carefully executed, for there is no reason to suppose that the meaning of *di'u* was any more stable over two or more millennia than 'malaria' has been over the past 200 years, or that Mesopotamian literary works were any more precise in their terminological usage than English ones. And the *OED* entry distinguishes, in a way that these studies of *di'u* do not, how writers have experienced and conceptualised malaria over the years. Finkel's (1998) excellent study of the maleficent demon *samana* and the suffering it caused in humans and animals shows that such an approach can be productive in Mesopotamian medical studies too (see also Heeßel 2007).

In modern medicine, patients' self-reporting and physicians' naked-eye observation is rarely considered sufficient to produce an objective identification of disease, which often depends instead on highly sophisticated

interventions at the microscopic or even genetic level. Indeed modern disease terms are predicated on such technical analyses of pathogens and pathologies. Thus, if they are to be applied meaningfully to ancient contexts, those applications must be the outcome of similarly high-tech osteopathological examinations. But if historians do not choose to engage with bioarchaeology, they are left with textual accounts that – quite apart from the semantic shifts and major cultural gaps between us and them – are no more reliable than experientially based accounts today. The historical record, in short, can usually reveal only *the subjective experience of illness* but no reliable *objective identification of disease* (Leven 2004). And if nineteenth-century writers were unable (by modern standards) to accurately describe and account for malaria, with no false attributions or misdiagnoses, then we can hardly expect ancient Mesopotamian scribes and scholars to have done any better. We also have to acknowledge that disease entities mutate, die out, and migrate across species all the time: witness AIDS, SARS, and the many influenza viruses over the past quarter century. There is thus no reason to suppose that a disease entity *di'u* can ever be objectively identified; instead it labelled a set of unpleasant summer experiences that included fevers, sweating, and headaches, and which were likely to have had more than one environmental and or pathogenic origin.

But that does not mean we should abandon the attempt to translate Mesopotamian medical terms as simply too alien to modern sensibilities. One alternative might be to experiment with premodern symptom-orientated terminology instead: in this case a fitting translation for *di'u* might be 'ague', in common English usage until modern disease aetiology made it redundant:

1. An acute or violent fever. *Obs* [attested 1377–1611].
2. *esp.* A malarial fever, marked by successive fits or paroxysms, consisting of a cold, hot, and sweating stage. The name *ague* was apparently at first given to the burning or feverish stage, but afterwards more usually to the cold or shivering stage, as being the most striking external character of the disease [attested c.1386–1859].
3. *loosely* or *fig.* Any fit of shaking or shivering, like the cold stage of ague; quaking [attested 1589–1813].

The examples of malaria and ague remind us of just how recent modern bio-medicine is. The past few centuries have completely transformed scholarly understandings of the workings of the human body, its malfunctions and predators. Indeed, even the English word 'science' in its modern sense is less than three centuries old: according to the *OED*, its first attested use is by Isaac Watts (1674–1748) in 1725: 'The word science, is usually applied to a whole body of regular or methodical observations or propositions, . . . concerning any subject of speculation'. But even Watts was not a 'scientist' in the contemporary sense; that word was coined by William Whewell (1794–1866) in 1840.²

There are historians for whom medicine begins with the hospitals and stethoscopes and social change ushered in by the French Revolution, or with the 'rationalism' of Enlightenment philosophy. But if we take that line, then this essay might as well stop here for there would be no premodern 'medicine' to study or debate. And if historians of science more generally were only to study those theories that are correct by contemporary criteria, then even many mainstream nineteenth-century theories – phlogiston, phrenology, eugenics, germ theory, the ether – would be ruled illegitimate too. Very few would dispute that Isaac Newton is an appropriate subject for a historian of science; indeed he is often held to be an iconic founder of modern scientific thinking. Yet by his own lights he was no scientist (and could not have been, living when he did) but a natural philosopher, whose investigations of the natural, but divinely created, world encompassed numerology, alchemy, and theology as well as mathematics, optics, and mechanics (Fauvel et al. 1988; Fara 2002). Few historians of science would nowadays attempt to divide his work into the 'rational' and the 'irrational', 'magic' and 'mathematics', or 'superstition' and 'science', as these false, anachronistic dichotomies give us no insight at all into Newton's own understanding of how the world worked. If such presentist labelling is not a valid move for Newton, then it is equally inappropriate for appraising Mesopotamian scholars, for whom the natural and supernatural worlds were no less entangled and real.

This brings us to a consideration of knowledge and belief. The question, 'Do you believe in gravity?' sounds nonsensical to modern ears. Yet, we can ask quite reasonably, 'Do you believe in nuclear fission/Father Christmas/perpetual motion/the tooth fairy?' Why the difference? To put it simply, we do not 'believe' in gravity, because we are ontologically committed to its existence, despite the fact that we cannot see, feel, smell or hear it directly but only witness its effects. We *know* that gravity exists, thanks to Newton. But for all those other things, we have a *choice* whether to believe in them or not (and as it happens, in these instances, many of us choose not to). As Byron Good (1994, pp. 1–24) points out, historians and anthropologists have tended to use the verb 'believe' to describe the ontological commitments of peoples and cultures that they, the modern academics, 'know' to be wrong; and reserve the verb 'know' for what philosophers of science call justified true belief (even if those justifications were/are unknown to the supposed knower). However, just as we 'know' about gravity, the ancients 'knew' about demons and deities as an integral part of the phenomenological word: there was no choice in whether to believe in them or not. In this light, we should try to purge our historical discourse of phrases such as 'Babylonian witchcraft beliefs' (e.g., Abusch 2002).

In short, history of science and history of medicine these days define 'science' and 'medicine' very loosely, as the systematic investigation of the world and its relationships to bodies and societies (e.g., Lloyd

2004, pp. 5–8). The aim is not to make value judgements or to identify heroic precursors of the modern, as historians did in the mid-twentieth century, but rather to endeavour to understand how those systematic investigations were carried out, how they were interpreted at the time, and how those interpretations were in turn received and affected by the social, political, and intellectual environments in which the practitioners lived, thought, and worked (e.g., Nutton 2004, p. 16; see also Høyrup 1996 on the historiographical shifts in Babylonian mathematics). Such approaches emphasise the small-scale as much as the large-scale, highlight difference and individuality as much as coherence and continuity, and in particular explore the fascinating disjunctures between the messy practices involved in creating a body of knowledge and the clean, tidy images of that knowledge that practitioners produce for later consumption. Such methodologies are productive in Mesopotamian intellectual history too (e.g., Rochberg 2004), not least for medicine and healing, as the following examples aim to show.

Literary Images of Disease, Doctors, and the Divine in Early Mesopotamia

Hammurabi's Laws, written for the famous Babylonian king in the mid-eighteenth century BCE, is rarely considered to be a literary work in popular accounts of Mesopotamian medicine. More often it is cited as evidence for the fees paid to doctors (*asûm*) by different social groups in the Old Babylonian period for simple surgery, and the compensation due when those procedures failed (e.g., Spiegel 1997; Nemet-Nejat 1998, p. 78). However, there is no evidence that those laws in particular (§§215–223: Roth 1997, pp. 213–4), or any of the others in the long collection, were ever cited or referred to in any of the several thousand published legal records from this time (Roth 1997, pp. 12–4). Indeed, when one considers the original disposition of the laws it is difficult to imagine that they were ever meant to be directly consulted, despite the fact that their epilogue disingenuously suggests just that. They were written on a large stone stela, topped with an image of Hammurabi receiving the symbols of just kingship from the sungod Šamaš, which was originally deposited as a votive offering in his temple at Sippar. The twenty-eight columns of continuous text are arranged such that the upper parts are above eye height and the lower at floor level; no reading aids such as paragraphing, or even demarcation of the prologue and epilogue from the laws, enable one to locate the cluster of laws pertinent to one's needs. It is, in short, completely unusable as a reference text. And even though the laws also circulated more accessibly (on scribal exercise tablets) who, other than the professionally literate few, would have been able to read them?

But that is not to say that Hammurabi's Laws have no evidential value for early Mesopotamian medicine. Rather, we should understand them as a representation of Hammurabi's ideals of a justly ruled society in a

statement of self-legitimation over newly conquered territory, aimed as much at a divine audience as a human one. This is how, in other words, Hammurabi thought that he *ought* to present how society *ought* to work in order to retain the continuing support of the gods and to propagate his good name for posterity.

The epilogue's twelve curses against the stele's defacement or misuse, however, were no mere propaganda; given their protective function they really were considered effective. Amongst the terrible fates awaiting those who dare to disrespect the good name of Hammurabi is an unequivocal statement about the divine origins of disease and human limitations in comprehending and treating it:

May the goddess Ninkarak, daughter of the god An, who promotes my cause in the Ekur temple,³ cause a terrible malady to break out upon his limbs, an evil demon (*asakkum lennum*), a serious wound that cannot be soothed, that a doctor (*asúim*) cannot understand, which he cannot ease with bandages, which, like the bite of death, cannot be expunged; may he bewail his lost virility until his life comes to an end. (col. XXVIII, ll. 50–69; after Roth 1997, pp. 139–40)

Illness, in other words, is brought on by divine displeasure at human wrongdoing, sometimes through the agency of demons, and its symptoms are not necessarily susceptible to diagnosis or therapy. Physical, emotional, and sexual well-being is a consequence of a well-ordered life in a well-ordered society, the laws suggest; illness arises as divine retaliation for deliberate (or unwitting) disruption of the natural order.

This Ninkarak, Sumerian 'Lady of the Quay', who also went by the names of Nintinuga, Ninisina 'Lady of Isin', and Gula 'the great one', was the great goddess of sickness and healing in early Mesopotamia. Hammurabi's epilogue unequivocally demonstrates that, for those who wrote it, she had the power to inflict illness as well as to cure. The material evidence for her cult in the second millennium, centred on her temples at Isin and Nippur, has been explored by Avalos (1995, pp. 99–231) and Ornan (2004). Clay votive offerings were left to Gula in the form of sick people clutching their afflicted parts, and in the shape of dogs, her divine symbol (e.g., Gibson 1993). But there is also a substantial body of hymnology addressed to her, including a dozen hymns and letter-prayers in Sumerian from the Old Babylonian period and a magnificent Akkadian hymn, probably composed in the late second millennium, addressed to her by one Bullussa-rabi, literally 'her [Gula's] life-giving power is great' (Foster 2005, pp. 583–91). The Sumerian works are published online as part of the Electronic Text Corpus of Sumerian Literature (ETCSL, Black et al. 1998–2006).

Three of the Sumerian hymns were composed to Ninisina on behalf of kings – not surprisingly all of the Isin dynasty (ETCSL 2.5.1.4, 2.5.3.4, 2.5.5.5). Like the six others (ETCSL 4.22.1–6), they survive in one or two manuscripts each, mostly very fragmentary, typically from the southern

cities of Nippur and Ur. They present a multifaceted image of the goddess, laying as much emphasis on her familial ties to the great gods An and Enlil, and her erotic allure, as on her medical powers. *A šir-namšub to Ninisina (Ninisina B)*, for instance, is a portrait of the goddess bathing, while the surviving fragments of *Ninisina and the gods (Ninisina F)* focus on her ownership of the erotic *šuba* stones and her sexual relationship with the god Pabilsaĝ (ETCSL 4.22.2, 4.22.6). The longest and best preserved, the splendid *A šir-gida to Ninisina (Ninisina A)* lays equal emphasis on her healing and sexual powers, with an interesting bridging passage about Ninisina as midwife (ETCSL 4.22.1). The first half of *A šir-amerima (?) for Iddin-Dagan (Iddin-Dagan D)* (ETCSL 2.5.3.4), addresses the goddess directly, not as a benevolent healer but as an overwhelming force of nature: ‘When you draw through the flesh the scalpel and the lancet, knives like lion’s claws – the bodies of the black-headed people tremble because of you!’ (lines 8–9). Ninisina in this view is to be feared, rather than revered – but it gradually becomes clear that the aim of the hymn is to direct that wrath on Iddin-Dagan’s behalf (lines 34–38):

Holy Ninisina, . . . , whose raging heart, made like the heart of dusk (?), none can cool; whose angry heart no god can confront, which like the sea, bringing a flood-wave, drowns (?) the foe. Like the high tide, she pours spewed-out bile upon the enemy.

Although these nine hymns have little archaeological context to help interpret their function and meaning, at least two of the three other Sumerian compositions about Ninisina were used in scribal training at schools in Nippur, as part of the curricular grouping now known as Letter Collection B or the Sumerian Epistolary Miscellany (ETCSL 3.3.10, 3.3.21, 5.7.2; Robson 2001; Michalowski 2006). This was a loose cluster of around twenty short compositions (its exact make-up was not fixed) which included many letters between historical personages as well as apparently fictional characters. The *Letter from Inanaka to the goddess Nintinuga* (Böck 1996; ETCSL 3.3.10) purports to be a letter-prayer from an ill woman to the goddess of healing, while *Nintinuga’s Dog* (ETCSL 5.7.2) is supposedly an inscription for a votive offering. In fact, on closer analysis they are clearly literary constructions: the latter even shares its plot structure and denouement with *An Axe for Nergal*, another supposed votive inscription from the same curricular cluster (Black et al. 2004, pp. xxvi–xxvii). They and the *Letter from the scribe Nanna-manšum to the goddess Ninisina* (ETCSL 3.3.21) are based on the same concept: that a personal prayer or offering to Ninsina/Nintinuga takes the form of a proffered contract: if the goddess agrees to heal the sufferer, then she or he will repay the debt through personal piety. As Inanaka suggests to Nintinuga (lines 18–25),

If it pleases my lady, and the *asag* demon which is in my body leaves my body, and thus allows me to step again on the path of life with my feet, I will then

Table 1 The word *a-zu* ‘healer’ in Sumerian literature

Protagonist	Epithet	Translation	ETCSL Source
Bau	<i>a-zu gal saĝ gig₂-a</i>	Great healer of the black-headed people	4.80.1, 268
Ninisina	<i>a-zu gal kalam-ma</i>	Great healer of the Land	4.80.1, 392
	<i>a-zu gal saĝ gig₂-ga</i>	Great healer of the black-headed people	3.3.21, 7 4.22.1, 23
	<i>a-zu kalam-ma</i>	Healer of the Land	3.3.10, 2
	<i><a>-zu mah saĝ gig₂-ga</i>	Majestic healer of the black-headed people	2.5.3.4, 1
Nintinuga	<i>a-zu sag₉-ge</i>	Kindly healer	5.7.2, 9
Damu	<i>a-zu zi-ĝal₂-la-ka</i>	Healer of living creatures	2.2.4, 242
Utu	<i>a-zu gal [a]-a saĝ gig₂-ga</i>	Great healer, father of the black-headed people	4.32.2, 2
Cheese	<i>a-zu lu₂-ulu₃(-kam)</i>	Healer of mankind	2.4.2.14, 21–22

be your maidservant, the courtyard sweeper of your temple, and will serve you. Furthermore after I have recovered, I will name you, my lady, as ‘the healer of the crippled’ (*lu₂-kud-da du₇-du₇*).

Of course, curricular literature cannot reveal the extent to which such human–divine transactions took place in actuality, but archaeological evidence of the cult, as well as parallels in ancient Greek temple medicine (e.g., Avalos 1995; Lloyd 2004, pp. 40–83), strongly suggest that this was no mere fictional device.

The next section further explores Sumerian literary images of Ninisina, in particular the terms for healing professions associated with her and other fictional protagonists.⁴

The Professions of a-zu, šim-mu₂ and išib in Sumerian Literature

The 150,000-word Electronic Text Corpus of Sumerian Literature (ETCSL), comprises some 400 compositions across a wide range of genres. Its protagonists range from gods and goddesses to mythical heroes, historically attested kings, fictional humans (both named and anonymous), as well as animals, inanimate objects and abstract ideas such as Summer. Yet the word *a-zu* (‘doctor, healer’) occurs just 10 times, always in hymns and prayers and never in narrative works, and almost always as an epithet of deities (Table 1). The sole exception is a repeated description of cheese as ‘the healer of mankind’ in *A lullaby for a son of Šulgi* (*Šulgi N*). Furthermore, those deities are almost exclusively female: Ninisina/Nintinuga of course, and Bau, an important goddess of the Lagash–Girsu region. Ninisina’s son Damu (‘Blood’) and the sungod Utu are the only male deities named as healers too. There is a limited range of description, regardless of the protagonist: the *a-zu* is almost always described as *gal* ‘great’ or *mah* ‘majestic’

Table 2 The word *šim-mu₂* ‘herbalist’ in Sumerian literature

Protagonist	Epithet	Translation	ETCSL source
Kug-Nanna	<i>šim-mu₂ dumu PN</i>	Herbalist, son of PN	3.3.39, A13
Ninisina	<i>šim-mu₂ kalam-ma</i>	Herbalist of the Land	2.2.4, 240
	<i>šim-mu₂ uĝ₃ lu-a</i>	Herbalist of the abundant people	3.3.21, 7
Nintinuga	<i>šim-mu₂ tur₅-ra-ta</i>	Herbalist to the sick	5.7.2, 9
Šuhalbi	<i>šim-mu₂ uĝ₃ lu-a</i>	Herbalist of the Land	2.5.4.02, A7

and usually *kalam-ma* ‘of the land’ or *saĝ giĝ₂-ga* ‘of the black-headed people’ (that is, the inhabitants of the region).

The title *šim-mu₂* (literally ‘plant-grower’) is often translated ‘incantation priest’ or ‘exorcist’, based on first-millennium equations of Sumerian *šim-mu₂* with Akkadian *āšipu* ‘exorcist’ (e.g., Geller 2007, p. 2), with the implication that it embodied a separate set of healing practices to the profession of *a-zu* (e.g., Abrahams 2003). It occurs five times in the ETCSL corpus, again almost exclusively in relation to the goddesses Ninisina/Nintinuga and Bau/Šuhalbi (Table 2). The only exception is one Kug-Nanna, the fictional human sender of a letter-prayer to the god Ninšubur, who gives his professional title along with his patronym as a means of self-identification. The three descriptions of Ninisina/Nintinuga as *šim-mu₂* are all collocates of *a-zu*; that is, they occur in the same or adjacent lines as elegant variants of one another; and as we have seen Bau/Šuhalbi is also called *a-zu* (albeit in a different hymn). And while *a-zu* is well attested in the economical, legal and administrative record of early Mesopotamia, *šim-mu₂* is a much rarer word, found only in literary works and school lexical lists after the mid-third millennium.⁵ On current evidence, then, *šim-mu₂* and *a-zu* were not considered separate medical professions in the real or divine spheres. Rather, the former was a high-register, archaising synonym for the latter. Perhaps, then, ‘herbalist’ would be a philologically and contextually more appropriate translation for *šim-mu₂* than ‘incantation priest’.

In the hymn *Ninisina A* the goddess twice performs *nam-išib* ‘*išib* rites’, having been endowed them by the great god An (ETCSL 4.22.1, 30, 36, 122). Now, this word is the abstract noun of *išib*, a type of priest (Sallaberger & Vulliet 2005, p. 631). It is often assumed that it must be some sort of healing, incantatory activity (e.g., ETCSL; Abrahams 2003).⁶ Of eleven attestations of this profession in the ETCSL corpus, five refer to anonymous humans, usually along with other types of cultic personnel (Table 3). In a further five instances, historically attested kings call themselves *išib* as a means of describing their pious relationship with An or the holy city of Keš. Just once is the god Ningišzida described as a majestic *išib* holding sacred equipment. Goddesses, it seems, are never *išibs* and nor, it seems, are *išibs* particularly responsible for healing people.

Table 3 The word *išib* ‘purification priest’ in Sumerian literature

Protagonist	Context	Translation	ETCSL source
Anon human	<i>išib lu₂-mah gudug ġiri₃-sig₁₀-ga ġi-par₄-ra til-a</i>	The <i>išib</i> , <i>lu₂-mah</i> , <i>gudug</i> , and <i>ġiri₃-sig₁₀-ga</i> priests who dwell in the <i>ġipar</i>	1.8.2.4, 118
	<i>išib-zu šita ku-ga šu nu-mu-ra-ni-in-du₇</i>	(Nanna), your <i>išib</i> priest does not make holy supplications to you	2.2.2, 351
	<i>aġ₂ išib-bi nu-kug-kug-ga-gin₇ / šu-luh-bi kur-kur-ra nu-ub-ta-sed₆-a-gin₇</i>	As though (the temple’s) <i>išib</i> priest’s equipment were not utterly sacred, / as though its cleansing rites did not bring calm in all countries	2.2.4, 86–87
	<i>išib lu₂-mah nin-diġir ug₅-ga maš₂-e ba-dab₅-ba</i>	The dead <i>išib</i> , <i>lu₂-mah</i> , and <i>nin-diġir</i> priests, chosen by extispicy	2.4.1.1, 78
	<i>me hal-hal-ne 10 išib-ne / ki za-za-a-ne a-tu₅-a-tu₅-a-ne susbu₂-be-e-ne</i>	Those endowed with divine powers, 10 <i>išib</i> priests, prostration priests, bathed priests, ablution priests	4.08.10, 21–22
Šulgi	<i>išib an ki-a gaba-ri nu-tuku</i>	(Šulgi), the unrivalled <i>išib</i> priest of heaven and earth!	2.4.2.01, 100
Lipit-Eštar	<i>išib an-na šu dadag-ga-me-en</i>	I (Lipit-Eštar) am An’s <i>išib</i> priest with clean hands	2.5.5.1, 23
	<i>keš₃^{ki} išib-bi ba-gub-be₂-me-en</i>	I (Lipit-Eštar) serve Keš as its <i>išib</i> priest	2.5.5.1, 64
	<i>išib kiš₃^{ki}-še₃ ^dnin-tur₅-re zid-de₃-eš pad₃-da-me-en</i>	You (Lipit-Eštar) have been rightly chosen by Nintur as the <i>išib</i> priest of Keš	2.5.5.2, 46
Rim-Sîn	<i>išib an-na sizkur sikil-la tum₂-ma</i>	(Rim-Sîn), <i>išib</i> priest of An, suitable for pure prayers	2.6.9.5, 2
Ninġišzida	<i>išib mah-am₃ eš₂-da kug šu du₈</i>	Mighty <i>išib</i> priest who holds the holy <i>ešda</i> vessels!	4.19.1, 6

Further, the eleven literary occurrences of *nam-išib* ‘išib rites’ outside the hymn to Ninisina are also associated with cultic places, kings, and male deities (Table 4). Most collocate with *šu-luh* ‘lustration’ rituals or make explicit reference to water or the Abzu, the freshwater abyss where the god Enki resides. Once again, there are no nearby references to healing or sickness, and just one neighbouring allusion to performing incantations. In short, in Sumerian literary contexts the standard translation of *išib* as ‘incantation priest’, with healing powers, cannot be sustained.

Now literary works are clearly not reliable witnesses for everyday healing practices in early Mesopotamia, in that they are primarily idealistic representations of the divine realm. However, in royal inscriptions *išib an-na* ‘An’s purification priest’ occurs as an epithet of kings from Lugalzagesi (mid-third millennium, Steible 1982, Lugalzagesi 1, 6) to Šu-Suen (c.2030 BCE, RIME 3/2.01.04.17, 7: Frayne 1997). And the Ur III administrative corpus, where *išib* priests appear nearly 90 times as sealing officials, as recipients of rations and clothing, as owners of fields, and in various other capacities, suggests that they were much more deeply embedded in the institutional infrastructure than the rarely attested *a-zu* healers were.⁷

To sum up, a close, corpus-based reading of Old Babylonian Sumerian literature reveals the commonly understood dichotomy *a-zu* ‘doctor’ versus *šim-mu₂* / *išib* ‘incantation priest’ does not stand up to scrutiny. Rather, in early Mesopotamian literary contexts *a-zu* and *šim-mu₂* were essentially synonyms for (divine, usually female) ‘healer’, while *išib* was a type of (human, royal, male) priest whose rituals involved water. The later equations of Sumerian *šim-mu₂* with Akkadian *āšipu* ‘exorcist’ are just that: later equations, and have no relevance to the argument here.

The absence of ‘incantation priests’ from Sumerian literature does not imply that incantations played no healing role in the Ur III and Old Babylonian periods: the mass of surviving exemplars shows that quite clearly they did. Indeed, one of Ninisina’s hymns says that immediately after performing *išib* rites:

^dnin-isin₂^k-na-ke₄ tu₆ bi₂-in-dug₄ ba-sag₉
i₃-nun-e nam-šub ba-an-šum₂

Ninisina speaks the incantation over him and he recovers.

She performs the incantation (ritual) with ghee. (ETCSL 4.22.1, 37–38)

The Old Babylonian Sumerian literary terms for ‘incantation’, *tu₆*, *nam-šub*, and *mu₇(KA×LI)-mu₇* or *inim-mu₇*, are together attested some forty times in contexts such as ^den-ki-ke₄ eš₃-e abzu-ta mu₇-mu₇ nam-til₃-la-ni mu-na-rig₇ ‘Enki has bestowed his life-giving incantations on you (Haia)’ (ETCSL 2.6.9.2, 38). The literary term for ‘incantation priest’, *lu₂-mu₇-mu₇* or *inim-mu-ĝal₂*, is much rarer, referring to anonymous humans in just one myth and one proverb (with variants) (ETCSL 1.1.3; 142, 6.1.2, 54 = 6.2.3, UET 6/2 267). Both *nam-šub* and *lu₂-mu₇-mu₇* (or more commonly *lu₂-mu₁₃(KA×ŠA)-mu₁₃*) are attested now and again in Ur III

Table 4 The word *nam-išib* ‘purification rites’ in Sumerian literature

Context	Translation	ETCSL source
<i>ka-mu₇-ġal₂ eridug^{ki}-ga-ke₄-ne / šag₄-gada-la₂ ki-en-gi-ra-ke₄-ne / nam-išib abzu mu-na-ab-be₂-ne</i>	The incantation priests of Eridug / and the linen-clad priests of Sumer perform the <i>išib</i> rites of the Abzu	1.1.3, 142–144
<i>[nam]-egir₃-zid nam-nin-diġir nam-išib nam-lu₂-mah nam-gudug me-a</i>	Where are the rites of the <i>egir-zid</i> and <i>nin-diġir</i> priestesses, the rites of the <i>išib</i> , <i>lu₂-mah</i> , and <i>gudug</i> priests?	1.3.1, F 21; cf. I 11–15
<i>šembi-zid nam-išib eridug^{ki}-ga</i>	The kohl of the <i>išib</i> rites of Eridug	1.3.3, 51, 60
<i>šu-luh-ha nam-išib šu-du₇-e</i>	Lustration and <i>išib</i> rites	2.4.2.02, 12
<i>eridug^{ki}-ta a nam-išib-ba-ka ni₂-ġu₁₀ mi-ni-dadag nam-išib dug₃-ga-kam šu-luh dadag-ga-kam</i>	I (Šulgi) cleansed myself in water of <i>išib</i> rites from Eridug (Urim, the city of) good <i>išib</i> rites and clean lustration	2.4.2.03, 29 2.4.2.07, 46
<i>šu-luh kug-ga lugal nam-išib zu barag kug-ge he₂-du₇</i>	(Ninurta), king of the holy lustration, expert in <i>išib</i> rites, you are suited for the holy throne dais!	4.27.02, C 8
<i>ki gal šu-luh sikil nam-išib-e du₇-za</i>	Your great place, perfected for pure lustration and <i>išib</i> rites (of E-melem-huš, Nuska’s temple in Nippur)	4.80.1, 55
<i>iri abzu-ta barag-ga ri-a nam-išib-e ġar-ra / e₂ mu₇-mu₇, an ki-a šid-da</i>	O city, founded upon a dais in the Abzu, established for <i>išib</i> rites / house where incantations of heaven and earth are recited (of Ningirim’s temple in Murum)	4.80.1, 230–231

administrative records too.⁸ In short, the single collocation of *nam-išib* with *tu₆* and *nam-šub* in *Ninisina hymn A*, quoted above (and in the hymn to Ningirim's temple, Table 4), is not strong enough evidence to identify the former as a synonym for 'incantation'; rather we should see purification as a third, previously overlooked element in the healing process – but one that does not belong solely to the healing domain. We shall return to this question in the next section.

Epistolary Evidence of Medical Practice

Letters have recently come into focus as useful sources for the social history of Mesopotamian medicine (e.g., Durand 1988, 1997; Attia & Buisson 2005; Jean 2006). Letters from the eighteenth-century city of Mari mention individuals with the professional titles *asûm* and *wāšipum* (the Old Babylonian dialect forms of *asû* and *āšipu*) (Heimpel 2003, pp. 581, 591). In general, named *asû* are dispatched by the king or officials to heal individuals or households; more rarely anonymous *wāšipû* work with *mussirû* 'purifiers' or *kalû* 'lamenters' to cleanse whole communities of taboos or sickness (Heimpel 2003, nos. 26 44, 26 263). Rather like the roughly contemporary Sumerian literary images of *a-zu* and *išib*, the *asûm* and *wāšipum* of eighteenth-century Mari worked in very different contexts and on very different scales.

A few hundred years later, Late Bronze Age diplomatic communiqués between Egypt, Babylonia, and the polities of the northern Levant and Anatolia suggest a closer relationship between the two professions. They occasionally mention the dispatch of *asûs* and *āšipus* together, as well as the statue of a healing goddess, between royal courts (Moran 1992, EA 23, EA 49; Beckman 1999, nos. 22G, 23; see also Zaccagnini 1983). It is also striking that the two professional terms remained meaningful outside Babylonia; but of course they may simply be Babylonianisms for native healers whose roles and responsibilities might have been quite different (for a later period, see also Dion 1989).

Nearly 600 letters to the seventh-century Assyrian kings Esarhaddon and Assurbanipal from a variety of royal scholars were amongst the first cuneiform tablets to be excavated from Nineveh in the 1840s. Now housed in the British Museum, they were edited and translated by Simo Parpola (1983, 1993; see also Luukko and Buylaere 2002, nos. 160–77; Reynolds 2003, nos. 124–42) and have recently gone online (Radner et al. 2007). Amongst them are some 126 letters from eight named *āšipus* and 21 from four named *asûs*, as well as a few of each whose authorship cannot be attributed. Despite constituting by far the largest evidentiary corpus for Mesopotamian healing in practice, they have been the subjected to close attention only sporadically (Parpola 1971, 1983; Jean 2006; Villard 2006). To my knowledge, there has been no study of healing *per se* in them, as there has been for celestial divination, for instance

(Brown 2000). While such a task is well beyond the scope of this short article, I shall point out a few areas worth exploring more deeply.

First, there is the question of the practitioners' relationships with their patients and with other scholarly professionals at court. It is immediately noticeable that both *asûs* and *āšīpus* write to the king almost exclusively about male patients: the king himself, of course, various princes, anonymous royal babies, an ailing *āšīpu* – and the Queen Mother.⁹ Just one letter, from the chief *asû* Urad-Nanaya, refers to an unidentified female patient in a damaged context, saying 'she will recover' (Parpola 1993, no. 317). Now, the abundance of royal offspring suggests that royal women were present at court and must have required some sort of medical attendance. However, it was not the *asûs* and *āšīpus* who administered to them. Similarly, amongst the twenty or so extant Neo-Assyrian royal extispicy queries about medical matters, the only royal women mentioned are the Queen Mother and another whose name is missing (Starr 1990, nos. 190, 192; also at Radner et al. 2007). We should probably thus infer a parallel, women's domain of healing and midwifery in the royal palace, whose practitioners did not report to the king – or at least did not do so through correspondence in cuneiform. The Queen Mother may have had exceptional gender status through her (presumably post-menopausal) age and rank. We do not know the sex of the babies but it is possible either that they were too young for their gender to matter in this context; or that these were all male heirs of the king.

Twenty-four extant letters from Neo-Assyrian royal scholars are co-authored, ten by astrologers only, and fourteen by *āšīpus* (mostly Adad-šumu-ušur) and their colleagues (Table 5). The majority of the *āšīpus'*

Table 5 Co-authored letters from Neo-Assyrian royal *āšīpus*

Senders	Subject matter	Parpola 1993 no.
<i>āšīpu</i> , astrologers (2), chief scribe, lamenter	Substitute King Ritual	1
<i>āšīpu</i> , chief scribe	Substitute King Ritual	3
<i>āšīpu</i> , chief scribe, lamenter	Substitute King Ritual	25
<i>āšīpu</i> , lamenter	Substitute King Ritual	212
<i>āšīpus</i> (2)	Substitute King Ritual	209
	Substitute King Ritual	221
<i>āšīpus</i> (2), chief scribe	ominous utterances	24
<i>āšīpu</i> , astrologer, chief scribe	offerings for deity	205
<i>āšīpu</i> , astrologer, chief scribe, lamenter	(unclear fragment)	232
<i>āšīpus</i> (2)	nocturnal healing ritual?	231
	anti-witchcraft rituals	256
	unidentified ritual	259
<i>āšīpus</i> (3)	unidentified ritual	281
<i>āšīpu</i> , <i>asû</i>	Queen Mother's health	297

professional collaborations were with astrologers (including the chief scribe) and lamenters over the performance of the Substitute King Ritual, triggered by a solar eclipse, and other matters of royal cultic performance. There is just one surviving letter co-authored by an *asû* and an *āšīpu*, reporting on the recovery of the Queen Mother after illness. It is tempting to link this apparent anomaly with the apparently anomalous position of the Queen Mother in the gender system of Assyrian royal medicine, although the tiny size of the dataset precludes hard and fast conclusions.

Second, there are interesting questions to be asked about the scholars' practical relationships with tradition and theory. Because the main thrust of Assyriological work has been on the decipherment and interpretation of the enormous corpus of scholarly medical writings, whether recipe collections or omen series, little consideration has been paid to how (and even if) *asûs* and *āšīpus* actually put those writings to use in their working lives (but see, e.g., Heeßel 2000, pp. 92–4). Cynthia Jean (2006, pp. 165–7) has recently compared the contents of the famous *Āšīpu's Handbook* (see above) with the substantial library holdings of the Neo-Assyrian *āšīpu* Kišir-Aššur. She found exemplars of just half of the hundred or so categories of *āšīpūtu* (as she classified them) amongst his tablets. Now, given that Kišir-Aššur's library almost certainly included long-perished wooden and ivory writing boards (Klengel-Brandt 1975), we should not read too much into this single piece of evidence. However the Neo-Assyrian royal *āšīpus'* letters also tell a similar story.

In their letters and reports to the Assyrian king, the *āšīpus'* astrologer colleagues regularly quoted the great 70-tablet celestial omen series *Enūma Anu Ellil*, as well as the much shorter astronomical handbook MUL.APIN. The extispicers, or sacrificial diviners, used a limited repertoire of omens in their 76 surviving reports to the king (of which around half are admittedly very fragmentary). When the extispicy produced an unfavourable outcome they typically included four or five omens in the report, but the entire extant repertoire comprises just 64 different omens out of the many thousands given in the 99-tablet omen series *Bārūtū*. Perhaps more tellingly, *Bārūtū* describes, and gives portents for, thirteen ominous zones of the liver but in the corpus of surviving reports only six of those zones are mentioned in four or more different omens, two more in just one each, while the remaining five are never mentioned. As for medical genres, the *asûs* sent medical recipes to the king (e.g., Parpola 1993, no. 321) and the *āšīpus* quoted rituals (e.g., Parpola 1993, nos. 238, 277, 296) – but never once in nearly 130 letters did they cite the prognostic omen series *Sakikkū* 'Symptoms' in support of their diagnoses, recommendations, or instructions (Heeßel 2000, 93).¹⁰ Rather, the *āšīpus'* prognoses tended to be based on careful observation, long experience, and a large dose of no-nonsense pragmatism. Here, for instance, the chief *āšīpu* Marduk-šakin-šumi responds to king Esarhaddon's complaint in the summer of 670 BCE:

As to what the king, my lord, said: ‘My arms and legs are without strength!’ and ‘I cannot open my eyes; I am worn out and lie prostrate!’ – that is because this fever has lingered inside the very bones. It is not serious. The gods Aššur, Šamaš, Bel, and Nabû will provide health. (*Break*) His illness will depart – he will be just fine. (Parpola 1993, no. 242, obv. 5 – rev. 6; translation slightly adapted)

I am reminded here of Viggo Brun’s (2003, 125) comments on Thai court medicine of the late 19th century, whose ‘relationship to actual medical practice is weak’:

It is not readily applicable to diagnosis and treatment of diseases. One could say that the theoretical framework we find in the court tradition is divorced from practice and functions only as a frame of reference, a model. This framework legitimates practice but does not dictate it. Thus the royal tradition has an explicit theoretical framework which the village tradition lacks, but the actual medical practice of the two are still very similar.

The final big question concerns the core function of the Neo-Assyrian royal *asûs* and *āšīpu*s. Some recent discussions of the professions rely solely on the idealised images presented by the theoretical corpus of *āšīpūtu* and other scholarly works, underplaying or ignoring the epistolary evidence of these men at work (Scurlock 1999, 2005; Geller 2007; Jean 2006 is the exception). JoAnn Scurlock (1999, pp. 78–9), for instance, has argued that ‘the *asû*’s forte was neither prognosis nor diagnosis’ but that his quasi-pharmacological role was to deal with routine medical matters and to ‘compound drugs for complex diseases, provided that they had been diagnosed for him by a colleague (the *āšīpu*)’. But in the Neo-Assyrian royal court, at least, that image does not stand up to close inspection. King Esarhaddon’s chief *asû*, Urad-Nanaya wrote to him in the early summer of 670 BCE as follows:

The king my lord keeps on saying to me, ‘Why don’t you diagnoses the nature of this illness of mine and bring about its cure?’ Formerly I spoke to the king at the audience and could not clarify his symptoms. But now I am sealing a sending a letter (about that): it should be read to the king, to inform the king, my lord. If it suits the king, my lord, let the diviners perform an extispicy on account of this. (after Parpola 1993, no. 315)

In other words, not only does the king expect his *asû* to make diagnoses and prognoses but the confirmatory mechanism is a sacrificial divination not an *āšīpu*’s agreement. Urad-Nanaya goes on to prescribe a lotion which he has prepared for the king before, with instructions for the palace staff to administer it, a salve, and a bag of healing stones – again without reference to any *āšīpu*’s supposed superior medical authority.

Table 5 shows at a glance that personal healing was only a small part of the *āšīpu*’s professional remit. Indeed just 40% of their extant letters mention such activities in passing, and even fewer mention particular individuals’ ailments (Jean 2006, p. 102). Rather, much of their work involved

subjecting their clients to rituals of purification and cleansing, in which the words *ellu* 'pure' and *ebbu* 'clean' and related terms feature prominently (Wilson 1994, pp. 67–83). Most obviously the letters frequently mention the rituals *Bīt Rīmki* 'bath house' and *Bīt Salā' Mē* 'shower house', in which the king was repeatedly washed to remove any residual evil portended by a solar eclipse (Parpola 1993, nos. 97, 212, 219, 308, 352, 371). Anti-witchcraft rituals such as *Šurpu* 'Burning' and *Maqlū* 'Combustion' cleanse and purify through burning symbolic objects rather than washing the client (Parpola 1993, nos. 200, 255, 256, 261, 274, 296, 316). The more general descriptor *takpirtu* 'purification' also features prominently in the *āšīpu*' epistolary discourse (Parpola 1993, nos. 160, 184, 212, 247, 277, 279).

In the vigorous *āšīpu*-debates over the years the word 'magic' has cropped up repeatedly, as it is wont to do in any discussion of Mesopotamian medicine, but rarely as more than 'a relatively self-evident term by which we may conveniently label genres of texts, because *we* identify the practices referred to implied in those texts as "magical"' (van Binsbergen & Wiggermann 1999, p. 4; my emphasis). Given that the majority of the Neo-Assyrian royal *āšīpu*' correspondence is concerned with preserving and protecting the king's relationship with the divine through performance of protective, apologetic, or cleansing actions, it seems to me that ideas of ritual and purification are worth exploring further, not least because both terms (admittedly no less difficult to grasp than 'magic') have recently been subject to extensive and stimulating theoretical analysis (e.g., Wilson 1994; Bell 1997; Insoll 2004; Kreinath et al. 2006; Campkin & Cox 2007; Smith 2007). Further, the term 'magic' categorises a set of thoughts and activities as alien to the mindset and lifestyles of those of us moderns who study the ancient world, and thus risks belittling, trivialising, or even denigrating those ideas and practices, while ritual-like activities, and concerns about bodies' and spaces' cleanliness or pollution, are as much a part of modern, Western society as they were of Mesopotamian culture. That is not to say we should somehow domesticate or over-identify with ancient healing practitioners, but rather that historians should have techniques of both familiarisation and de-familiarisation in their repertoire.

Conclusions and Prospects

Mark Geller has recently lamented that it is still not easy for historians of medicine to 'faire une distinction simple et claire entre la médecine et la magie dans la thérapeutique mésopotamienne' (2007, p. 1). It is unclear to me why anyone should try to do so (see already Biggs 1995, p. 1918); it is no more likely to succeed, or produce meaningful results, than if one tried to separate Mesopotamian 'physics' from 'chemistry' or any other two post-Enlightenment scientific concepts. If even Isaac Newton was not a 'scientist' by modern definitions, and his work not 'science' but 'natural philosophy', then there is little point in attempting to identify ideas and

activities in ancient Mesopotamia, or anywhere in the premodern world, that happen to coincide with current (folk) ideas about what science is or ought to be. We can equally do away with notions of ‘progress’ and ‘regress’ in medical history (e.g., Scurlock 2006b). Rather we should work to understand past ways of thinking about and explaining the natural world and its interactions with bodies, minds, and societies. That means abandoning the search for forerunners of modern thought and practice in the ancient world in favour of attempting to understand ancient thoughts and practices in their own socio-political context.

Perhaps paradoxically, the particularities of Mesopotamian contexts can be more clearly revealed by attention to recent work on the anthropology and history of other premodern cultures. As I have aimed to demonstrate, this does not necessitate abandoning a close engagement with the evidence in favour of overly complex theorising. At the most basic level, an awareness of the rich variety of approaches to healing worldwide can help to break down simplistic primitivist-presentist assumptions, while opening up the possibility of potentially fruitful comparisons and contrasts with other cultures of healing. It can also suggest new ways of studying familiar material, or bring into focus sources that have been hitherto overlooked.

The three tiny case-studies presented here have shown, I hope, that it is possible to analyse images and practices of Mesopotamian medicine in culturally sensitive ways that are no less reliant on careful philology than traditional approaches. In particular, examining key words in well defined contexts reveals the shifting meanings of profession names such as *a-zu* and *išib*, *asû(m)* and *(w)āšipu(m)* across time, space, and genre. Allowing the ancient actors, whether divine characters in literary works or (once) living people to describe for themselves their thoughts and deeds, instead of imposing our own classifications, generalisations, and cultural norms on them, enables us to see a surprisingly complex, ever-changing set of interactions between the human and the divine, male and female, practitioner and client, theory and practice.

There are precious few historical actors in recent accounts of Mesopotamian medicine – except, ironically Esagil-kin-apli, who may well have been part of an invented tradition given the complete dearth of contemporary (eleventh-century) historical evidence for his existence: compare Pythagoras (e.g., Burnyeat 2007) or Hippocrates himself (Nutton 2004, pp. 53–71). And yet Assyriology is uniquely endowed with an abundance of provenanced, contextualised, autograph sources; there is no particular reason to follow the textual methodologies of Classicists and Biblical scholars who, most of the time, are forced to work only with a closed corpus of manuscripts many generations removed from their original contexts of production and consumption. While text edition is unquestionably an important (and difficult) strand of medical Assyriology, it should not be the only permissible research strategy. The increasing availability of online datasets, such as those utilised in the studies presented here, may well

encourage a wider range of historical, philological, and anthropological methodologies than are popular at the moment. But access to more ancient sources is not enough on its own. There is a whole library of stimulating academic literature out there, on the history and anthropology of other healing cultures. Let us take a step back, explore some new and exciting ways of thinking about premodern medicine, and return to the tablets to look at them afresh.¹¹

Short Biography

Eleanor Robson is a Fellow of All Souls College, Oxford and a senior lecturer in the Department of History and Philosophy of Science at the University of Cambridge. She also teaches for Cambridge's degrees in Assyriology and in Early Civilisations of the Aegean and Near East, and is Vice-Chair of the British Institute for the Study of Iraq. She holds a BSc in Mathematics from the University of Warwick and a DPhil in Oriental Studies from the University of Oxford. Her postdoctoral career at Oxford included stints as Junior Lecturer in Akkadian, researcher on the *Electronic Text Corpus of Sumerian Literature* (<http://etcsl.orinst.ox.ac.uk>) pilot project, a British Academy Postdoctoral Fellowship at Wolfson College, and a Postdoctoral Research Fellowship at All Souls College. Robson's research interests focus on the socio-intellectual history of ancient Iraq and its neighbours. Books include *Mesopotamian Mathematics, 2100–1600 BC* (Clarendon Press, 1999); *The History of Mathematical Tables: From Sumer to Spreadsheets*, with M. Campbell-Kelly, M. Croarken, and R. G. Flood (Oxford University Press, 2003); *The Literature of Ancient Sumer*, with J. A. Black, G. Cunningham, and G. Zólyomi (Oxford University Press, 2004); *Who Owns Objects? The Ethics and Politics of Collecting Archaeological Artefacts*, with C. Gosden and W. L. Treadwell (Oxbow, 2006); and *Mathematics in Ancient Iraq: A Social History* (Princeton University Press, 2008). She has also published over thirty academic articles on related topics. Current projects include *The Oxford Handbook of the History of Mathematics*, with J. Stedall and J. E. Barrow-Green; and *Knowledge and Power in the Neo-Assyrian Empire* (<http://knp.prs.heacademy.ac.uk>), with K. Radner and S. J. Tinney, funded by the UK Higher Education Academy. She and Tinney are co-directors of the AHRC-funded research project *The Geography of Knowledge in Assyria and Babylonia: A Diachronic Comparison of Four Scholarly Libraries*, which runs for 5 years from September 2007.

Notes

* Correspondence address: Eleanor Robson, Department of History and Philosophy of Science, University of Cambridge, Free School Lane, Cambridge CB2 3RH, UK. Email: er264@cam.ac.uk.

- ¹ *Oxford English Dictionary online* (<http://dictionary.oed.com/>), sv. 'malaria', accessed 20 August 2007.
- ² *OED online*, sv. 'science' and 'scientist', accessed 20 August 2007. 'We need very much a name to describe a cultivator of science in general. I should incline to call him a Scientist'.
- ³ That is, the great god Enlil's temple in Nippur.
- ⁴ By this I mean not that the gods *per se* were not absolutely real to the inhabitants of Mesopotamia; rather, that we should be scrupulous about distinguishing the divine characters in curricular literature from the deities to whom offerings and prayers were presented in temples.
- ⁵ A search on the Pennsylvania Sumerian Dictionary (<http://psd.museum.upenn.edu/epsd>) on 22 March 2007 yielded 89 instances of *a-zu* from the Sargonic to Old Babylonian periods, of which 36 were economic, legal or administrative (ELA), 17 lexical (LEX), 20 literary (LIT), and the rest unclassified. (The 20 literary attestations include 2 royal inscriptions and 8 wrongly identified instances of *a-zu* 'your seed/offspring' from the ETCSL corpus as well as the 10 occurrences discussed here). By contrast PSD showed just three instances of *šim-mu₂*, all of which were lexical (two Old Babylonian, one from ED IIIa Shuruppak). The Cuneiform Digital Library Initiative's online corpus (<http://cdli.ucla.edu/>) has one instance of *šim-mu₂* as an epithet of Nintinuga in an Ur III royal inscription (RIME 3/2.01.06.1006: Frayne 1997) and two wives (*dam šim-mu₂*) receiving rations in ED IIIa Shuruppak.
- ⁶ ETCSL translates *nam-išib* variously as 'her (Ninisinā's) role as incantation priest' (line 30), 'incantations' (line 36), and 'office of incantation priestess' (line 122).
- ⁷ A search on CDLI on 15 August 2007 yielded 89 instances of *išib* priests in Ur III administrative records. On the same day, PSD showed a total of 146 occurrences: 8 LEX, 18 LIT (mostly ETCSL; also royal inscriptions); 120 ELA from ED IIIa to Ur III.
- ⁸ On 15 August 2007, PSD listed thirteen Ur III/ELA instances of *lu₂-mu_{7/13}-mu_{7/13}* and two of *nam-šub*.
- ⁹ On gender and Mesopotamian medicine, see also Heeβel 2006.
- ¹⁰ Neither did the *āšipu* Kišir-Aššur keep any tablets of *Sakikkū* in his library, despite owning a copy of the *Āšipu's Handbook* – which lists *Sakikkū* in its sixth line (Jean 2006, pp. 64, 147–53; see also Stol 1991–2, pp. 44–5; Heeβel 2000, pp. 58–60).
- ¹¹ I gratefully acknowledge the help of Martin Worthington and the anonymous referee in making many small but significant improvements to this article. Needless to say, all remaining errors of fact and judgement are mine alone.

Works Cited

- Abrahami, P, 2003, 'A propos des fonctions de *l'asū* et de *l'āšipu*: la conception de l'auteur de l'hymne sumérien dédié à Ninisinā', *Journal des Médecines Cunéiformes*, vol. 2, pp. 19–20.
- Abusch, T, 2002, *Mesopotamian Witchcraft: Toward a History and Understanding of Babylonian Witchcraft Beliefs and Literature*, Brill, Leiden, The Netherlands.
- Attia, G, & Buisson, A, 2004, 'Du bon usage des médecins en assyriologie', *Journal des Médecines Cuneiformes*, vol. 4, pp. 9–15.
- , 2005, 'A.2025, "un texte pour les médecins"', *Journal des Médecines Cuneiformes*, vol. 6, pp. 41–2.
- Avalos, H, 1995, *Illness and Health Care in the Ancient Near East: The Role of the Temple in Greece, Mesopotamia, and Israel*, Scholars Press, Atlanta, GA.
- , 2007, 'Epilepsy in Mesopotamia Reconsidered', in IL Finkel and MJ Geller (ed.), *Disease in Babylonia*, Brill, Leiden, The Netherlands, pp. 131–6.
- Beckman, G, 1999, *Hittite Diplomatic Texts*, 2nd edn, Scholars Press, Atlanta, GA.
- Bell, CM, 1997, *Ritual: Perspectives and Dimensions*, Oxford University Press, Oxford, UK.
- Biggs, RD, 1990, 'Medizin. A. In Mesopotamien', in DO Edzard (ed.), *Reallexikon der Assyriologie und Vorderasiatische Archäologie*, vol. 7, De Gruyter, Berlin, Germany, pp. 623–9.
- , 1995, 'Medicine, Surgery, and Public Health in Ancient Mesopotamia', in J Sasson (ed.), *Civilizations of the Ancient Near East*, Scribner, New York, NY, pp. 1911–24.
- Black, JA, Cunningham, GG, Ebeling, J, Flückiger-Hawker, E, Robson, E, Taylor, JJ, & Zólyomi, GG, 1998–2006, *The Electronic Text Corpus of Sumerian Literature*, Oriental Institute, Oxford, UK, <<http://etcsl.orient.ox.ac.uk>>.

- Black, JA, Cunningham, GG, Robson, E, & Zólyomi, GG, 2004, *The Literature of Ancient Sumer*, Oxford University Press, Oxford, UK.
- Böck, B, 1996, “‘Wenn du zu Nintinuga gesprochen hast, . . .’”, *Untersuchungen zu Aufbau, Inhalt, Sitz-im-Leben und Funktion sumerischer Gottesbriefe*, *Altorientalische Forschungen*, vol. 23, pp. 3–23.
- , 2000, *Die babylonisch-assyrische Morphoskopie*, Institut für Orientalistik, Vienna, Austria.
- , 2003, “‘When You Perform the Ritual of ‘Rubbing’: Of Magic and Medicine in Ancient Mesopotamia’”, *Journal of Near Eastern Studies*, vol. 62, pp. 1–16.
- Bonechi, M, 2003, ‘The Second Prescription in the Pharmaceutical Text TM.75.G.1623 (III Millennium Ebla)’, *NABU* no. 26.
- Brown, DR, 2000, *Mesopotamian Planetary Astronomy-Astrology*, Styx, Groningen, The Netherlands.
- Brun, V, 2003, ‘Traditional Thai Medicine’, in H Selin (ed.), *Medicine across Cultures: History and Practice of Medicine in Non-Western Cultures*, Springer, Berlin, Germany, pp. 115–32.
- Burnyeat, MF, 2007, ‘Other Lives’, *London Review of Books*, vol. 29, no. 4, <http://www.lrb.co.uk/v29/n04/burn02_.html>.
- Campkin, B, & Cox, R, (eds.) 2007, *Dirt: New Geographies of Cleanliness and Contamination*, IB Tauris, London, UK.
- Civil, M, 1960, ‘Préscriptions médicales sumériennes’, *Revue d’Assyriologie*, vol. 54, pp. 57–72.
- , 1961, ‘Une nouvelle prescription médicale sumérienne’, *Revue d’Assyriologie*, vol. 55, pp. 91–4.
- Clancier, P, Cunningham, G, Reynolds, F, Robson, E, & Tinney, S, 2007–, *The Geography of Knowledge in Assyria and Babylonia: A Diachronic Analysis of Four Scholarly Libraries*, Department of History and Philosophy of Science, University of Cambridge and Babylonian Section, University of Pennsylvania Museum of Archaeology and Anthropology <<http://cdl.museum.upenn.edu/gkab>>.
- Coleman, M, 2005, ‘Lettre aux editeurs’, *Journal des Médecines Cuneiformes*, vol. 6, pp. 43–8.
- Cunningham, G, 1997, *Deliver Me from Evil: Mesopotamian Incantations, 2500–2500 BC*, Pontificio Istituto Biblio, Rome, Italy.
- d’Agostino, F, 2003, ‘Considerazioni sul medico eblaita e i suoi strumenti di lavoro’, in P Marrassini (ed.), *Semitic and Assyriological Studies Presented to Pelio Fronzaroli by Pupils and Colleagues*, Harrassowitz, Wiesbaden, Germany, pp. 136–49.
- Dion, PE, 1989, ‘Medical Personnel in the Ancient Near East: ‘asú’ and ‘šīpu’ in Aramaic Garb’, *Aram*, vol. 1, pp. 206–16.
- Durand, J-M, 1988, ‘Maladies et médecins’, in J-M Durand (ed.), *Archives épistolaires de Mari*, vol. I, no. 1, Éditions Recherche sur les Civilisations, Paris, France, pp. 541–84.
- , 1997, ‘La médecine’, ‘Les épidémies et les maladies’, in J-M Durand (ed.), *Documents épistolaires du palais de Mari*, vol. 1, Éditions Recherche sur les Civilisations, Paris, France, pp. 303–9.
- Fara, P, 2002, *Newton: The Making of a Genius*, Columbia University Press, New York, NY.
- Farber, W, 1989, *Schlaf, Kindchen, Schlaf! Mesopotamische Baby-Beschwörungen und Rituale*, Eisenbrauns, Winona Lake, IN.
- Fauvel, J, Flood, R, Shortland, M, & Wilson, R, 1988, *Let Newton Be!* Oxford University Press, Oxford, UK.
- Fincke, J, 2000, *Augenleiden nach keilschriftlichen Quellen*, Königshausen & Neumann, Würzburg, Germany.
- , 2003–4, ‘The Babylonian Texts of Nineveh: Report on the British Museum’s *Aššurbanipal Library Project*’, *Archiv für Orientforschung*, vol. 50, pp. 111–49.
- Finkel, IL, 1998, ‘A Study in Scarlet: Incantations against *Samana*’, in SM Maul (ed.), *Tikip Santakki Mala Bašmu*, Styx, Groningen, The Netherlands, pp. 71–106.
- , 2005, ‘On Late Babylonian Medical Training’, in AR George and IL Finkel (ed.), *Wisdom, Gods and Literature: Studies in Assyriology in Honour of WG Lambert*, Eisenbrauns, Winona Lake, IN, pp. 137–223.
- Foster, BR, 2005, *Before the Muses: An Anthology of Akkadian Literature*, 3rd edn, CDL Press, Bethesda, MD.
- Frayne, D, 1997, *Royal Inscriptions of Mesopotamia. Early Periods: Ur III Period (2112–2004 BC)*, University of Toronto Press, Toronto, Canada.
- Fronzaroli, P, 1998, ‘A Pharmaceutical Text at Ebla (TM.75.G.1623)’, *Zeitschrift für Assyriologie*, vol. 88, 225–39.

- Geller, MJ, 2005, *Renal and Rectal Disease Texts*, De Gruyter, Berlin, Germany.
- , 2007, 'Médecine et magie: l'asú, l'ášipu et le mašmášu', *Journal des Médecines Cunéiformes*, vol. 9, pp. 1–8.
- George, AR, 1991, 'Babylonian Texts from the Folios of Sidney Smith, Part II: Prognostic and Diagnostic Omens, Tablet I', *Revue d'Assyriologie*, vol. 85, pp. 137–67.
- Gesche, P, 2000, *Schulunterricht in Babylonien im ersten Jahrtausend v. Chr.*, Ugarit-Verlag, Münster, Germany.
- Gibson, M, 1993, 'Nippur: Sacred City of Enlil, Supreme God of Sumer and Akkad', *Al-Rafidan*, vol. 14, pp. 1–18.
- Good, BJ, 1994, *Medicine, Rationality and Experience: An Anthropological Perspective*, Cambridge University Press, Cambridge, UK.
- Gurney, OR, & Finkelstein, JJ, 1957, *The Sultantepe Tablets*, vol. 1, British Institute of Archaeology at Ankara, London, UK.
- Gurney, OR, & Hulin, P, 1964, *The Sultantepe Tablets*, vol. 2, British Institute of Archaeology at Ankara, London, UK.
- Heeßel, NP, 2000, *Babylonisch-assyrische Diagnostik*, Ugarit-Verlag, Münster, Germany.
- , 2001–2, "'Wenn ein Mann zum Haus des Kranken geht . . .". Intertextuelle Bezüge zwischen der Serie *šumma alu* und der 2. Tafel der Serie SA.GIG', *Archiv für Orientforschung*, vol. 48/49, pp. 24–49.
- , 2002, *Pazuzu: archäologische und philologische Studien zu einem alt-orientalischen Dämon*, Brill, Leiden, The Netherlands.
- , 2004, 'Reading and Interpreting Medical Cuneiform Texts: Methods and Problems', *Journal des Médecines Cunéiformes*, vol. 3, no. 1, pp. 2–9.
- , 2005a, 'Bibliographie zur altorientalischen Medizin', *Journal des Médecines Cunéiformes*, vol. 6, pp. 34–40.
- , 2005b, 'Stein, Pflanze und Holz. Ein neuer Text zur "medizinischen Astrologie"', *Orientalia*, vol. 74, pp. 1–22.
- , 2006, 'Der verschwiegene Unterschied: die Geschlechterdifferenz in medizinischen Texten aus dem Alten Mesopotamien', in B Heininger and R Lindner (ed.), *Krankheit und Heilung. Gender – Religion – Medizin*, Lit Verlag, Münster, Germany, 9–24.
- , 2007, 'The Hands of the Gods: Disease Names and Divine Anger', in IL Finkel and MJ Geller (ed.), *Disease in Babylonia*, Brill, Leiden, The Netherlands, pp. 120–30.
- Heimpel, W, 2003, *Letters to the king of Mari*, Eisenbrauns, Winona Lake, IN.
- Herrero, P, 1983, *La thérapeutique mésopotamienne*, Éditions Recherche sur les Civilisations, Paris, France.
- Høyrup, J, 1996, 'Changing Trends in the Historiography of Mesopotamian Mathematics: An Insider's View', *History of Science*, vol. 34, pp. 1–32.
- Hunger, H, 1976, *Spätbabylonische Texte aus Uruk*, vol. 1, Mann, Berlin, Germany.
- Insoll, T, 2004, *Archaeology, Ritual, Religion*, Routledge, London, UK.
- Janzen, JM, 2002, *The Social Fabric of Health: An Introduction to Medical Anthropology*, McGraw-Hill, Boston, MA.
- Jean, C, 2006, *La magie néo-assyrienne en contexte: recherches sur le métier d'exorciste et le concept d'ášipútu*, Neo-Assyrian Text Corpus Project, Helsinki, Finland.
- King, H, 1998, *Hippocrates' Women: Reading the Female Body in Ancient Greece*, Routledge, London, UK.
- , 2001, *Greek and Roman Medicine*, Bristol Classical Press, London, UK.
- Kinnier Wilson, JV, 2005, 'Notes on the Assyrian Pharmaceutical Series uru.an.na : maštakal', *Journal of Near Eastern Studies*, vol. 64, pp. 45–51.
- Kinnier Wilson, JV, & Finkel, IL, 2007, 'On *Bāšānu* and *Dī'u*, or Why Nabonidus Went to Tema', *Journal des Médecines Cunéiformes*, vol. 9, pp. 16–22.
- Klengel-Brandt, E, 1975, 'Ein Schreib-Tafel aus Assur', *Altorientalische Forschungen*, vol. 3, pp. 169–71.
- Köcher, F, 1963–80, *Die babylonisch-assyrische Medizin in Texten und Untersuchungen*, vols. 1–6, de Gruyter, Berlin, Germany.
- Kreinath, J, Snoek, J, & Stausberg, M, (eds.) 2006, *Theorizing Rituals, Vol. 1: Issues, Topics, Approaches, Concepts*, Brill, Leiden, The Netherlands.

- Laessoe, J, 1955, *Studies on the Assyrian Ritual and Series* Bit Rimki, Munksgaard, Copenhagen, Denmark.
- Larsen, CS, 1997, *Bioarcheology: Interpreting Human Behavior from the Human Skeleton*, Cambridge University Press, Cambridge, UK.
- Leven, K-H, 2004, ‘“At Times Like These Ancient Facts Seem to Lie Before Me Like a Patient on a Hospital Bed”: Retrospective Diagnosis and Ancient Medical History’, in HJ Horstmanshoff and M Stol (ed.), *Magic and Rationality in Ancient Near Eastern and Graeco-Roman Medicine*, Brill, Leiden, The Netherlands, pp. 369–86.
- Lloyd, GER, 2004, *In the Grip of Disease: Studies in the Greek Imagination*, Oxford University Press, Oxford, UK.
- Luukko, M, & Van Buylaere, G, 2002, *The Political Correspondence of Esarhaddon*, Helsinki University Press, Helsinki, Finland.
- Maul, SM, 1994, *Zukunftsbewältigung: Eine Untersuchung altorientalischen Denkens anhand der babylonisch-assyrischen Löserituale (Namburbi)*, Von Zabern, Mainz am Rhein, Germany.
- Mays, S, 1998, *The Archaeology of Human Bones*, Routledge, London, UK.
- Michalowski, P, 1993, ‘The Early Mesopotamian Incantation Tradition’, in P Fronzaroli (ed.), *Literature and Language at Ebla*, Dipartimento di linguistica, Firenze, Italy, pp. 305–26.
- , 2006, ‘The Strange History of Tumul’, in P Michalowski and N Veldhuis (ed.), *Approaches to Sumerian Literature: Studies in Honor of Stip (H L J Vanstiphout)*, Brill, Leiden, The Netherlands, pp. 145–65.
- Moran, WL, 1992, *The Amarna Letters*, Johns Hopkins University Press, Baltimore, MD.
- Nemet-Nejat, KR, 1998, *Daily Life in Ancient Mesopotamia*, Greenwood Press, Westport, CN.
- Nutton, V, 2004, *Ancient Medicine*, Routledge, London, UK.
- Ornan, T, 2004, ‘The Goddess Gula and her Dog’, *Israel Museum Studies in Archaeology*, vol. 3, pp. 13–30.
- Parpola, S, 1983, *Letters from Assyrian Scholars to the Kings Esarhaddon and Assurbanipal*, vol. 2, Butzon & Bercker and Neukirchener Verlag, Kevelaer and Neukirchen-Vluyn, Germany.
- , 1993, *Letters from Assyrian and Babylonian Scholars*, Helsinki University Press, Helsinki, Finland.
- Pedersen, O, 1986, *Archives and Libraries in the City of Assur: A Study of the Material from the German Excavations*, vol. 2, Almqvist & Wiksel, Uppsala, Sweden.
- Radner, K, Robson, E, & Tinney, SJ, 2007, *Knowledge and Power in the Neo-Assyrian Empire*, Higher Education Academy Philosophy and Religious Studies Centre, Leeds, <<http://knp.prs.heacademy.ac.uk/>>.
- Reiner, E, 1958, *Šurpu: A Collection of Sumerian and Akkadian Incantations*, Graz, Austria.
- , 1995, *Astral Magic in Babylonia*, American Philosophical Society, Philadelphia, PA.
- Reynolds, F, 2003, *The Babylonian Correspondence of Esarhaddon*, Helsinki University Press, Helsinki, Finland.
- Roberts, C, 2002, ‘Paleopathology and Archaeology: The Current State of Play’, in R Arnott (ed.), *The Archaeology of Medicine*, Archaeopress, Oxford, UK, pp. 1–20.
- Robson, E, 2001, ‘The Tablet House: A Scribal School in Old Babylonian Nippur’, *Revue d'Assyriologie*, vol. 95, pp. 39–67.
- Rochberg, F, 2004, *The Heavenly Writing: Divination, Horoscopy, and Astronomy in Mesopotamian Culture*, Cambridge University Press, Cambridge, UK.
- Roth, MT, 1997, *Law Collections from Mesopotamia and Asia Minor*, 2nd edn, Scholars Press, Atlanta, GA.
- Sallaberger, W, & Vulliet, FH, 2005, ‘Priester. A. I. Mesopotamien’, in MP Streck (ed.), *Reallexikon der Assyriologie und Vorderasiatischen Archäologie*, vol. 10, no. 7/8, de Gruyter, Berlin, Germany, pp. 617–40.
- Schramm, W, 2001, *Bann! Bann! Eine Sumerisch-akkadische Beschwörungsserie*, Seminar für Keilschriftforschung, Göttingen, Germany.
- Schuster-Brandis, A, 2003, ‘Tupfen und Streifen. Erkenntnisse zur Identifikation von Steinnamen aus der Serie *abnu šikinsu* “Der Stein, dessen Gestaltung . . .”’, *Altorientalische Forschungen*, vol. 30, pp. 256–68.
- Scurlock, JA, 1999, ‘Physician, Exorcist, Conjurer, Magician: A Tale of Two Healing Professionals’, in T Abusch and K van der Toorn (ed.), *Mesopotamian Magic: Textual, Historical and Interpretative Perspectives*, Styx, Groningen, The Netherlands, pp. 69–79.

- , 2005, 'Ancient Mesopotamian Medicine', in DC Snell (ed.), *A Companion to the Ancient Near East*, Blackwell, Oxford, UK, pp. 302–15.
- , 2006a, *Magico-Medical Means of Treating Ghost-Induced Illnesses in Ancient Mesopotamia*, Brill, Leiden, The Netherlands.
- , 2006b, 'Whatever Possessed Them? Progress and Regress in the History of Medicine', *Journal des Médecines Cunéiformes*, vol. 7, pp. 11–6.
- Scurlock, JA, & Andersen BR, 2005, *Diagnoses in Assyrian and Babylonian Medicine: Ancient Sources, Translations, and Modern Medical Analyses*, University of Illinois Press, Chicago, IL.
- Selin, H, 2003, *Medicine across Cultures: History and Practice of Medicine in Non-Western Cultures*, Springer, New York, NY.
- Smith, V, 2007, *Clean: A History of Personal Hygiene and Purity*, Oxford University Press, Oxford, UK.
- Spar, I, & Lambert, WG, 2005, *Cuneiform Texts in the Metropolitan Museum of Art, Vol. 1: Literary and Scholastic Texts of the First Millennium BC*, The Metropolitan Museum of Art, New York, NY.
- Spiegel, AD, 1997, 'Hammurabi's Managed Healthcare – Circa 1700 BC', *Managed Care Magazine*, May issue, <http://www.managedcaremag.com/archives/9705/9705_hammurabi.shtml>.
- Starr, I, 1990, *Queries to the Sungod: Divination and Politics in Sargonid Assyria*, Helsinki University Press, Helsinki, Finland.
- Steible, H, 1982, *Die Altsumerischen Bau- und Weihinschriften*, Steiner, Wiesbaden, Germany.
- Stol, M, 1991–2, 'Diagnosis and Therapy in Babylonian Medicine', *Jaarbericht Ex Oriente Lux* vol. 32, pp. 42–55.
- , 2000, *Birth in Babylonia and the Bible: Its Mediterranean Setting*, Styx, Groningen.
- , 2007, 'Fevers in Babylonia', in IL Finkel and MJ Geller (ed.), *Disease in Babylonia*, Brill, Leiden, The Netherlands, pp. 1–39.
- Strathern, A, & Stewart, PJ, 1999, *Curing and Healing: Medical Anthropology in Global Perspective*, Carolina Academic Press, Durham, NC.
- Van Binsbergen, W, & Wiggermann, F, 1999, 'Magic in History: A Theoretical Perspective, and its Application to Ancient Mesopotamia', in T Abusch and K van der Toorn (ed.), *Mesopotamian Magic: Textual, Historical and Interpretative Perspectives*, Styx, Groningen, pp. 3–34.
- Van Dijk, JJ, & Geller, MJ, 2003, *Ur III Incantations from the Frau Professor Hilprecht-Collection*, Jena, Harrassowitz, Wiesbaden, Germany.
- Veldhuis, N, 1996, *Elementary Education at Nippur: The Lists of Trees and Wooden Objects*, PhD Dissertation, University of Groningen, The Netherlands.
- Villard, P, 2006, 'Les guérisseurs à la cour néo-assyrienne', in L Battini and P Villard (eds.), *Médecine et médecins au Proche-Orient ancien*, British Archaeological Reports, Oxford, UK, pp. 139–60.
- Von Weher, E, 1983–98, *Spätbabylonische Texte aus Uruk*, vols. 2–5, Mann, Berlin, Germany.
- Wasserman, N, 2007, 'Between Magic and Medicine: Apropos of an Old Babylonian Therapeutic Text against the *Kurānum* Disease', in IL Finkel and MJ Geller (ed.), *Disease in Babylonia*, Brill, Leiden, The Netherlands, pp. 40–61.
- Wiggermann, FAM, 1992, *Mesopotamian Protective Spirits: The Ritual Texts*, Styx, Groningen, The Netherlands.
- Wilson, JA, 1994, 'Holiness' and 'Purity' in Mesopotamia, Butzon & Bercker and Neukirchener Verlag, Kevelaer and Neukirchen-Vluyn.
- Wiseman, DJ, & Black, JA, 1996, *Literary Texts from the Temple of Nabû*, British School of Archaeology in Iraq, London, UK.
- Worthington, M, 2005, 'Edition of UGU 1 (= BAM 480 etc.)', *Journal des Médecines Cunéiformes*, vol. 4, pp. 6–43.
- , 2006, 'Edition of BAM 3', *Journal des Médecines Cunéiformes*, vol. 7, pp. 18–48.
- , 2007, 'Addenda and Corrigenda to "Edition of UGU 1(= BAM 480 etc.)" and "Edition of BAM 3"', *Journal des Médecines Cunéiformes*, vol. 9, pp. 43–6.
- Zaccagnini, C, 1983, 'Patterns of Mobility among Ancient Near Eastern Craftsmen', *Journal of Near Eastern Studies*, vol. 42, pp. 245–64.
- Zucconi, LM, 2006, 'Medicine and Religion in Ancient Egypt', *Religion Compass*, vol. 1. DOI: 10.1111/j.1749-8171.2006.00004.x
- Zysk, KG, 1991, *Asceticism and Healing in Ancient India: Medicine in the Buddhist Monastery*, Oxford University Press, Oxford, UK.