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"The Scaffolding of Our Thoughts": Essays on Assyriology and the History of Science in Honor of Francesca Rochberg edited by C. Jay Crisostomo, Eduardo A. Escobar, Terri Tanaka, and Niek Veldhuis

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The volume under review collects 20 essays dedicated by different scholars to Francesca Rochberg, a professor of Assyriology and renowned expert on ancient Mesopotamian celestial divination. Most of the essays deal with Assyriology and discuss cuneiform sources. Others [chs 11, 16, 17, and 19] focus on the Mesopotamian relationship with contemporary and later cultures or explore the reception of Mesopotamian astrological lore. Three instead regard subjects such as intercalary months in Persepolis tablets [ch. 15] or astronomical topics in ancient Greece [chs 18 and 20]. In the light of my own field of expertise, I will comment at greater length on the essays dealing with Mesopotamian sources, offering no more than a description of the others.

The volume opens with a brief preface by the editors, a guide to the abbreviations, and a list of Rochberg's publications [xiii–xx].

The first essay is Geoffrey E. R. Lloyd's "Where Next for 'Ancient Science'?" [ch. 1], which, starting from his personal experience, presents an overview of the evolution of the history of ancient science and offers some considerations regarding what happens when this field of research is extended to ancient civilizations besides Greece, i.e., to Mesopotamia, Egypt, China, and India. In particular, Lloyd ponders the problem of "incommensurability" when these cultures are compared on the same plane and on a one-to-one terminological relationship.

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Ann Kessler Guinan's "Crow Omens in Mesopotamia" [ch. 2], analyzes both the crow and the falcon omens, for they convey opposite values. Guinan begins with a description of the two birds and their names in Sumerian and Akkadian. She then discusses two texts that show similarities between them and with the first millennium omen series "If a city" (*Šumma ālu*). The first text is a late second millennium tablet with falcon and crow omens [BM 100874], published in De Zorzi 2009; the second pertains to the sub-series "If an exorcist goes to the house of a sick person" (*Enūma ana bīt marṣi āšipu illakū*) of the diagnostic series *Sakikku* [Heeßel 2000]. Guinan presents evidence that a "chronological relationship between these two texts and to the later first millennium omens is based on the two-value logic of divinatory interpretation" [18]. In this perspective, a binary logic underlies the healing of a sick person in relation to the flight of a falcon or the wail of a crow. As further evidence, Guinan presents another source from the Neo-Assyrian period, K. 6278 + Rm. 2, 389, which witnesses the evolution of the value of the crow and the exegetical work of the scribes. In the end, Guinan discusses first millennium references to both crow and falcon in the *Šumma ālu* series and the Neo-Assyrian letters. As a conclusive process of polarization,

> Crow enters the first millennium augural lexicon as the inauspicious counterpart of falcon. Falcon and crow are paired binary operators—references to one requiring references to the other. [21]

Guinan draws a conclusion from her analysis which admittedly "is based on the logics of divinatory interpretation and is, therefore, speculative" [22]. In the transmission and reelaboration of the material, a key role would be played by the figure of Esagil-kīn-apli, possibly the author or editor of the diagnostic series *Sakikku*.

Winitzer's and Lenzi's essays, which are lengthy and stimulating, discuss a wide range of evidence and new material. They surely deserve more attention, and what follows are marginal comments or addenda. Abraham Winitzer's "Old Signs in New Dress? On the Meaning of Inanna's Symbol as Sign and 'Presence' in Early Babylonian Divination" [ch. 3] produces a broad analysis of Inanna's symbol in Old Babylonian mantic literature. He starts from Piotr Steinkeller's proposal [1998] to identify a scarf (bar-si(g)/*paršīgu*) in the volute effigy on the pole in Uruk iconography and its ideographic rendering ($MUŠ_3$). Winitzer's central thesis is that

> the understanding of Inanna's/Ištar's unique divine emblem had been diluted to the point where it could be equated with the more common, even generic, diadem that adorned gods and men alike. [29]

In order to support this thesis, Winitzer discusses Old Babylonian references in omens (and in one incantation) not only to the *paršīgu* but to headdresses in general. Despite this interesting analysis, references to the *paršīgu* remain limited. Winitzer is aware of the lack of evidence that may support the idea of a continuity from Uruk (end of the fourth millennium BC) to the Old Babylonian period (19th–17th century BC)—more than one millennium—in the association of Inanna, her symbol, and the sash. He admits that

> no evidence can be mustered to suggest any such memory for the interim period militates against this possibility. [41–42]

His proposal to fill this gap is plausible but slippery:

> A more likely explanation is that the diviner made a rediscovery of sorts: a real or imagined visual sign interpreted as a headdress prompted him to fashion an interpretation recalling Ištar. [42]

Winitzer's conclusion is that

> the references to headdresses or headgear in the omens discussed above reflect genuine concern for divine statues and their cults. [44]

In the appendix, Winitzer produces a translation and a detailed commentary for the love incantation *YOS* XI, 87.

In building his arguments—that the symbol of Inanna is a sash and that this is exclusively associated with the goddess—Winitzer makes a selective use of sources that fit an *a priori* idea, in my opinion. A scrutiny of the references to *paršīgu* quoted in the *Chicago Assyrian Dictionary* P, pp. 203–205 reveals a more articulated frame for this apparel. This criticism can be extended to Steinkeller's article, the pillar of Winitzer's study.

According to Steinkeller [1998, 27],

> At least in this E[arly]D[ynastic] tradition, then, the great emblem of Inanna was conceived as a kind of garment that ornamented the divine image.

However, his "compelling argument" [1998, 27] is confutable, being based on a single passage of an early dynastic text whose interpretation is more an assumption than a certainty, starting from the hypotheses that

(a) the bar-su/sikil that appears in this text is a variant of bar-si/*paršīgu* and
(b) the three lines excerpted by Steinkeller are in apposition one to another.

Steinkeller's interpretation is suggestive, but largely speculative. The evidence that he quotes is selected to prove that

> [a]lthough there survive mentions of the bar-si made for kings, this appears to have been a typically feminine article

and that

> the bar-si was a standard element of the garb donned by the statues of Inanna/Ishtar. [Steinkeller 1998, 92].

References in Neo-Sumerian records and the *Chicago Assyrian Dictionary* show that the bar-si/*paršīgu* is not exclusively a feminine piece of clothing. As a matter of fact, other gods received it besides Inanna/Ištar. Despite the selective use of evidence and my personal doubts, Steinkeller's hypothesis could be correct. Winitzer is not the only supporter of this idea, which is already accepted by Paul-Alain Beaulieu, who, in the same volume as Steinkeller's essay, published a short article on Neo-Babylonian evidence for the bar-si/*paršīgu* as an emblem of Inanna/Ištar [Beaulieu 1998]. This article, overlooked by Winitzer, might have lent support to his arguments.

Alan Lenzi's "Material, Constellation, Image, God: The Fate of the Chosen Bull according to KAR 50 and Duplicates" [ch. 4] focuses on the so-called Ritual of the *kalû* for the covering of the *lilissu*-drum and, more precisely, "on the incantation recorded as a part of the abbreviated version of the ritual procedure" [63]. Lenzi argues that

> this incantation ritually incorporates (the hide and tendon of) a live bull into a divine entity—a deified drum—via performative assertions and persuasive analogies that give the relevant bovine materials and the resulting manufactured object celestial and mythological credentials worthy of divinity. [63]

The bilingual incantation and the following ritual for the consecration and killing of the bull is transcribed, translated, and commented upon [64–70]. A general discussion of the ritual follows, but

> [t]o understand the more substantial distinctiveness of KAR 50 and duplicates we must turn to its uniquely prescribed incantation. [71]

In this perspective, Lenzi analyzes the terms of this and other incantations through the theoretical approach of "persuasive analogy in magic and ritual" developed by Stanley J. Tambiah [1985]. Most of Lenzi's analysis focuses on the passage referring to the *ṣalmu* of the bull. He shows convincingly that the term and the passage refer to the celestial "image" of the bull, i.e., to the constellation of the Bull. According to Lenzi, "the incantation makes the *ṣalmu* (bull and image) worthy of divinity" [79]. In order to answer the question "How does one make something divine from mundane materials?" [79], he discusses the ritual of "Washing the mouth" (*mīs pî*) for the restoration of statues and the *historiolae*. In his conclusion, Lenzi, stressing that his essay is a small contribution to a larger debate about "ontology of divinity in ancient Mesopotamia" [87], writes in summary that

> First, the bull is not a god or divine.... Second, symbolism and metaphor are useful ways to think about the constitution of deity in ancient Mesopotamian ritual texts. [87]

Few comments should be added to Lenzi's thoughtful essay, the merits of which include having merged philological analysis with a grounded theoretical approach, a perspective not diffused in Assyriological studies.[1] Lenzi's assumption that «ṣalmu» refers to the constellation (or better, to the heavenly "image/figure" of the Bull) is convincing and could be substantiated by the similar use of this term in a text describing the shape of constellations first edited in Weidner 1927 and recently reedited with the addition of new unpublished material by P.-A. Beaulieu, E. Frahm, W. Horowitz, and J. Steele [2018]. However, it should be noted that in these texts «ṣalmu» is employed only to describe human figures, for example in

> The Old Man (Perseus) is a clothed (human) figure (*ṣalmu*) with a beard.... The Great Twins (Gemini) are two (human) figures (*ṣalmu*) with beards, set with a *kurkurru*.

From Stanley J. Tambiah's study [1985], which is discussed by Lenzi (but not quoted in his bibliography), the theory of speech acts could be tracked back through Searle, Austin, and so forth, to the pioneering and still insightful work of Bronisław Malinowski on the incantations of the Trobriand islanders in his *Coral Garden and Their Magic*, particularly the second volume *The Language of Magic and Gardening* [Malinowski 1935] and in his earlier article on the "Problems of Meaning" [1923].[2] Both *historiolae* and speech acts are the subject of Marinella Ceravolo's PhD dissertation [2020]. The question of deification, or, better, consecration, is strictly related to the concept of the sacred, a debated and pivotal topic in the history of religious studies, to which one may refer for theoretical bibliography.[3]

Matthew Rutz' "A Late Babylonian Compilation Concerning Ritual Timing and *Materia Medica*" [ch. 5] publishes and comments on a small fragment (CBS 562) from the Kabaza collection kept in the University of Pennsylvania Museum of Archaeology and Anthropology. Despite its fragmentary state, the text is of great relevance for several reasons. Dated to the Late Babylonian period, CBS 562 was part of a multicolumn tablet. In the obverse are copied

[1] For a detailed analysis of the term «ṣalmu» (image, statue, figurine; likeness), possibly related to the homophone term for "black" in Semitic languages, see Scagliarini 2008.

[2] For *historiolae* in Akkadian sources, see also Sanders 2001.

[3] For ancient Mesopotamia, see also Selz 1997.

the texts known as the *Prostration Hemerology* and the *Exorcist's Almanac*, while what remains of the reverse "contains the names of various *materia medica* with glosses" [97]. Rutz underlines the similarities and differences of CBS 562 with that of the other known copies of the *Prostration Hemerology* and the *Exorcist's Almanac* and discusses them within the stream of scribal transmission. As for why two hemerological texts and a list of plants were copied in the same tablet, Rutz states, "It is not entirely clear what these compositions are doing in close proximity, but a didactic context is possible" [97–98]. We may consider the compilation of sources for the performance of rituals as well, a practice documented in Neo-Assyrian letters.

M. Willis Monroe's "BM 40187: A Birthnote for Two Named Individuals" [ch. 6] publishes a small text kept in the British Museum (BM 40187), recording the name and date of birth of two children. The document belongs to a group of texts called "birth notes", which record the date of birth of individuals. BM 40187 raises to five the total of these "birth notes", which are dated to the Achaemenid and Seleucid period. Starting from the works of Rochberg on horoscopes [1998], Monroe analyzes BM 40187 within the "birth notes" group. According to Monroe,

> The purpose these [*sic*!] texts seems clear enough: to record the time of birth so that a horoscope could be calculated for the individual later in life. However, the means by which the existing tablets record this data differ on each exemplar. [116]

The author discusses the similarities and differences of this group of texts. The specific analysis of BM 40187 is limited to three philological notes on the introductory formula in line 1, the personal name Apattu in line 4, and the temporal expression («sarāqu ša šeḫeri», lines 5 and 11). I think that a close look at the content of BM 40187 will be worthwhile:

(1) By the command of Marduk and Nabû may it go well.
(2) 9th of Month Arahsamna (VIII)
(3) 41st year of Artaxerxes, king of the world,
(4) Apattu, daughter of
(5) Nabû-šumu-ibni, (at) the sprinkling
(6) of the morning was born.
(7) 3rd of Month Kislimu (IX), 1st year
(8) [of Ar]taxerxes, king of the world,
(9) Amat-beltīya, daughter of
(10) Nabû-šumu-ibni, (at) the sprinkling
(11) of the morning was born.

Within the "birth notes" group, BM 40187 shows many interesting features which are randomly found in other texts: it is the only other document that

(a) is dated to the Achaemenid period,
(b) collects multiple births, and
(c) records the names of the newborns.

BM 40187 is the only example, together with another text [Rochberg 1998, no. 30], that specifies the name of the children and of the father, it being the norm for the rest of these documents to omit the names of the newborn child and its parents. The two children are females, named Apattu and Amat-beltīya (not Amat-Belitya), and both are qualified as daughters of Nabû-šumu-ibni. They were born at the same moment ("the sprinkling of the morning") on day 9 of Arahsamna (VIII) and day 3 of Kislimu (IX), two successive months. What is striking is that the two births were 40 years apart. Apattu was born in the 41st year of Artaxerxes, while Amat-Beltīya was born in the first year of the reign of the same king. If we assume that "Nabû-šumu-ibni, father of Apattu" and "Nabû-šumu-ibni, father of Amat-beltiya" are the same person, we must conclude that he had two daughters at a distance of 40 years, the second when he was close to 60 or older.

One may wonder why BM 40187 records the date of birth of two sisters at a distance of 40 years. Other "birth notes" record more than one birth in the same document [Rochberg 1998, nos 29, 32], and in one [Rochberg 1998, no. 32] the time span between the oldest birth (158 Seleucid Era) and the two recent ones (194 and 197 SE) is around 35 years, which is very close to BM 40187. Being anonymously recorded, a familial relationship between the three newborn children is plausible but not irrefutable. For this temporal gap Rochberg concludes that

> The evidence that data were excerpted from other astronomical texts further precludes the possibility that a horoscope represents some observation, or even computation, of heavenly phenomena at the time of birth. [Rochberg 1998, 3–4]

Are we really dealing with horoscopic records? What is the point of recording Amat-beltīya's birth date or using it for horoscopic analysis when she was over 40 years old?

Ulla Koch ("Converging Fortunes—Links between Celestial and Intestinal Divination" [ch. 7]) discusses the connection between celestial signs and the analysis of entrails in the Akkadian tradition (2,000–1,000 BC) starting from historical and literary sources. The historical sources are mostly references to eclipses, both solar and lunar, for which extispicy is employed either to confirm the sign of the eclipse or to predict the eclipse itself. In literary

sources, we find prayers related to the performance of extispicy that refer to celestial signs or gods. As for the literary material, a collection of the extispicy prayers' *tamītu* "concerns the occurrence of lunar and solar eclipses" [123]. However,

> The *tamītus* were exemplary oracle questions and do not necessarily present queries that were actually performed.... There are [*sic*!], however, no reports preserved which could attest to the actual use of extispicy to inquire into the imminent occurrence of eclipses. [123–124]

As for the other prayers related to extispicy, the *ikribu*, celestial gods are invoked as well as the two patrons of divination, the sun god Šamaš and the storm god Adad. Koch discusses the first millennium *ikribu*s to Ninurta as Sirius (the Arrow, MUL.KAK.SI.SA$_2$), and to the two Ištar of Nineveh and Arbela, and a manuscript mentioning an *ikribu* to Šulpa'e, perhaps as an identification of Jupiter [Verderame 2010].

In the second part of her study, Koch focuses on intertextual references in mantic literature between extispicy and celestial omens. She discusses the *Enbu bēl arhi* (Fruit, lord of the month) hemerological section of the *Iqqur īpuš* series, where a passage records extispicy omens related to the Gall Bladder and the Finger. In addition to the discussion, Koch presents an unpublished fragment recording monthly Gall Bladder omens (K. 11142). Before the conclusions, Koch analyzes the series of texts correlating "Days of the months, medical remedies, celestial signs, stones and rituals" [138; "*Gestirn-darstellung* texts"] and comments on the evolution of the celestial observations in Mesopotamia "from being concerned primarily with the public domain to include the life of the individual" [140].

Documentary sources from the Neo-Assyrian period [Hunger 1992; Parpola 1993] offer further evidence for the relationship between extispicy, on the one hand, and calendrical and celestial omens on the other. As for the so-called astrological reports, Hunger 1992, §235 is a list of "auspicious days for performing extispicy" (line 12): in two passages the position of the Moon is mentioned.[4] In Hunger 1992, §235, one may wonder whether the gods (Marduk, Gula, ...), "in front of" (*ina* IGI) whom something (the extispicy?) must be performed, may be intended in their astral forms. A long omen

[4] See line 6 "[the *14th* day] when the moon and the sun"; and
line 11 "[the *27th* day] when the moon in ...".
For propitious days and the performance of the diviner ritual, see also the letter Parpola 1993, §183.

related to Nēberu (Jupiter) ends with a reference to the queries of the diviner (*bārû*):

> If Nēberu rises and the gods get peace: confused (things) will be made bright, blurred (things) will clear; rains and floods will come; the harvest-time grass will last until winter, the winter grass until harvest time; all lands will dwell in quiet; enemy kings will be reconci[led; the gods] will accept sacrifices, listen to [pray]ers; they will keep answering the di[viner]'s queries.

This omen is recorded in three different reports in Hunger 1992, by Nergal-ēṭir [§254], by Ašarēdu son of Damqa [§323], by…[§550], together with other omens related to the visibility of Jupiter. Its meaning has been discussed in Reiner 2007, 202.

In the famous letter of Marduk-šapik-zeri [Parpola 1993, §160], in which he presents a series of experts (*ummânu*) suitable to be elected in the king's staff, two of his protégées master both extispicy and celestial omens:

> [NN] has crossed over from Elam; [he fully masters] extispicy and is an expert in [Enūma A]nu Enlil, ancient and Sumerian hermeneutics [and the secrets of heaven and e]arth…
>
> ⋮
>
> Kudurru is proficient in extispicy and has read Enūma Anu Enlil…

For the association of Sun with Saturn and Libra [128], see also Weidner 1923, 470; Gössmann 1950, no. 86; Verderame 2002, 105–106 n325. While a direct relationship of Ištar of Nineveh and Ištar of Arbela with extispicy is not documented [132–133], the two goddesses are well known for the prophetic practices performed in their temples [Parpola 1997].

Quoting the "one interdisciplinary entry in the commentaries" relating to extispicy and heavenly bodies, Koch discusses "[a] commentary to an extispicy text" that

> explains the interpretation of two particular parts of the liver as favorable when they face to the right with the rising of Arcturus/Boötes:
>
> > Why is it favorable when the Presence and the Well-being point to the right? Because Arcturus is visible at its rising. Arcturus rises. [137]

The passage is quoted after her edition of a section of the liver omens series [Koch-Westenholz 2000, 137 §19. 27]. With regard to Arcturus, Koch comments,

> Arcturus is the brightest star North of the celestial equator and it was one of the Enlil and Akkad stars, which means it pertained to the Babylonians, i.e., "us." If Arcturus was bright at its rising, which was positive, it would be a good sign for "us". [138]

Indeed, "Not many omens pertaining to Arcturus/Bootees [*sic*] are preserved" [138 n74]; however, the relevance of this constellation emerges, for instance, in the observation of heliacal risings and settings of MUL.ŠU.PA [Gössmann 1950, 212–213; Kurtik 2007, 490–495] in the MUL.APIN almanac.[5]

The perspective of C. Jay Crisostomo's essay on *Sumerian Divination* [ch. 8] is very interesting, since his analysis focuses on the language of divinatory texts. In general, we know, on the one hand, that mantic literature spread from the beginning of the second millennium BC in the Akkadian language and, on the other hand, that during the third millennium BC different forms of divination were performed (extispicy, oneiromancy, celestial signs, and so on) and are documented through scattered references in documentary, literary, and historical texts, but that no Sumerian mantic literature exists or has survived from this early period. Crisostomo "discusses the exceptions, the rare examples of unilingual Sumerian or bilingual Sumerian-Akkadian divination" [148]. He starts with the analysis of the extispicy report embedded in an Ur III literary letter sent by Ibbi-Sîn to Puzur-Numušda, published in Michalowski 2006. With the exception of a middle second millennium (Kassite) school text, the only other witness of Sumerian language divination sources is a series of texts dealing with "extispicy, behavioral omens, diagnostic omens, and especially celestial omens" documented from the Neo-Assyrian period onward.[6]

The Sumerian language of both the report in the Ur III literary text and the omens in these late texts is "constructed off the accompanying Akkadian or…some Akkadian omen or terminology in the background" [152]. Besides the language, Crisostomo highlights two interesting aspects: first, that the Sumerian terms are often built over some erudite Akkadian equivalence from the lexical lists; second, that most of these texts focus on celestial signs. Besides parallel passages within this group of texts, Crisostomo cautiously restrains himself from reconstructing "an entire tradition or series on such scant evidence as one or possibly two omens that happen to co-occur on a few texts" [155].

In the conclusion, the author wonders, "Given the paucity of Sumerian language divination, why do typical first millennium omens bother to create or present the appearance of Sumerian omens through the use of extensive logograms?" [156]. His conclusion, with which I totally agree, is that these

[5] For classical sources, compare with Peachin 1986.

[6] See page 152 for a table with the list of known sources.

Sumerian divination texts are "a discursive semiotic, an attempt to explore the boundaries of traditional indexicality, a metadiscourse on the relationship between writing and language in cuneiform scribal culture" [157].

In the appendix, Crisostomo publishes, and comments on, one of these first millennium Sumerian texts dealing with celestial omens (K. 2241 + 2704). This text is of extreme interest and deserves some commentary. The fragment is the lower right part of a one-column tablet. According to the colophon, the tablet has been written by the well-known Neo-Assyrian scholar Nabû-zuqup-kēnu. What remains of the text are Sumerian omens introduced by UD, followed by the Akkadian omens, which are not introduced by any sign, except for the *šumma* in line 7′. Various heavenly bodies appear in the omens: the Raven (MUL.UGA), the Chariot (MUL.GIŠGIGIR) here probably to be identified with Enmešarra, the Scorpion (MUL.GIR$_2$.TAB), the Plow (MUL.APIN), the Gaping Mouth Beast/Demon (KA.MUŠ.I$_3$.KU$_2$.E), Anzu, the Ox (MUL.GU$_4$.U$_3$), Enmebarhum, Antasura, the Goat (MUL.UD$_5$), and the Field (MUL.AŠ.GAN$_2$). Most of these names signify the planet Mars [Reynolds 1998; Brown 2000, 70–72, 74]. Furthermore, the fact that most omens deal with the color red [Verderame 2004] suggests that most if not all the omens concern the planet Mars.

The following two essays focus on Akkadian and Sumerian literature. Tzvi Abusch's "The Form and History of a Babylonian Prayer to Nabû" [ch. 9] analyzes the structure of a hand-lifting prayer (*šuilla*) to the god Nabû (*Nabû* 3) in comparison with a similar prayer to Marduk (*Marduk* 2), which has been the object of a previous study of his [Abusch 1983].[7] Both texts show a structure different from the other *šuilla*s. Abusch concludes that

> a relationship exists between Nabû, no. 3, and Marduk, no. 2, though it should be clear by now that while the Marduk composition is a consummately executed example of a new form, the Nabû composition is an imperfect, perhaps second-rate, example of the form. [179]

He also concludes that "our Nabû *šuilla* is dependent upon Marduk, no. 2 and made use of it" [181].

In "Translation in *The Elevation of Ištar*" [ch. 10], Niek Veldhuis discusses the bilingual text known as *The Exaltation of Ištar*. After a description of the composition, he analyzes the Sumerian language and some "Rare Sumerian Words and Expressions" [191]. Veldhuis' conclusion is "The analysis of the particularities of the Sumerian in *The Elevation of Ištar* makes it likely that

[7] *Marduk* 2 has been recently edited in Oshima 2011, 328–336. For *šuila*s in general, see most recently Frechette 2012.

the text originates in an Assyrian learned context" [198] and in the end he offers a summary of evidence for this interpretation.

Jeffrey L. Cooley's long essay, "Judean Scribalism, Documentary Epistemology, and the Name ישראל" [ch. 11], analyzes "the rationalization of the name 'Israel' in Genesis 32:28 and 35:9–11" [207]. He starts from the studies and recent advancement on epistemology of Ancient Mesopotamia and concludes that a similar scribal epistemology underlies the biblical text.

Nils P. Heeßel's "Dating EAE: When Was the Astrological Series *Enūma Anu Ellil* Created?" [ch. 12] puts into correct perspective the question about the creation of the astrological series *Enūma Anu Enlil* (= *EAE*), here spelled *Enūma Anu Ellil*. In his own terms, the

> paper tries to show through careful re-examination of the available evidence that the general conviction of a second millennium date for *EAE* rests on highly shaky evidence and should at best be regarded as an educated guess. [253]

Before discussing evidence for the chronology of the texts, Heeßel makes a crucial distinction between standardized texts (i.e., those that date back to the first millennium BC) and texts organized in a series with tablet numbering and catch-line/*incipit* cross-references. Although the series began to be compiled in the Old Babylonian period, omen texts reached a standardized form only in Kassite times. According to Heeßel, the "semblance between texts…is not indicative of the existence of the series *EAE* in middle Babylonian times" and "the only clear evidence is a text bearing a tablet numbering and naming the series *EAE* in its colophon" [254].

After an overview of the discussion about the date of redaction of the *EAE* series, Heeßel scrutinizes the references in favor of a second millennium BC date of redaction, confuting each piece of evidence and related arguments. However, as the author stresses in the conclusion, even for the first millennium, evidence for dating *EAE* are scanty and "the question raised by Weidner in 1944 about the date of compilation of *EAE* has not been satisfactorily answered yet" [260]. Thus, considering the Kassite period standardization process and the first undoubtedly dated manuscript of the series *EAE*, Heeßel concludes that "the date of creation of *EAE* can be set anytime between 1200–716 BCE" [260].

A recent Old or Middle Babylonian period text kept in the British Museum [BM 103690] and published in Finkel 2018, 25–31, substantiates Heeßel's doubt regarding the fragmented state of astrological material in the second millennium BC. The text is a catalog of *incipits* (DUB *re-še-e-tim* "tablet of *incipits*") of omens and "medical" collections, stones and plants list, and

Sumerian compositions. Fifteen of these *incipits* (i 2–3, 9, 12, 13–14, 26, 37, 42, 44, 47[?], 14[?]; ii 14[?], 4′, 5′; iii 3, 6)[8] refer to heavenly signs or days that may suggest phenomena related to the Moon or the Sun. As for the *incipit* of the series [257], the hendiadys An – Enlil preceded by the temporal marker (u_4 an-ne$_2$ ^{d}en-lil$_2$) is found a number of times in various literary works and royal inscriptions, even as *incipit*. This is the case, for instance, of an inscription of Sîn-iddinam and one of Gungunum as well as an Old Babylonian witness of the *Laws of Ur-Namma* [George 2011, nos 37, 44, 107]. This, of course, does not mean that u_4 an-ne$_2$ of the literary catalog refers to one of these compositions, but that the expression was common and diffused and can't be univocally referred to the *incipit* of *EAE*.[9]

In "Bricoleurs in Babylonia: The Scribes of *Enūma Anu Enlil*" [ch. 13], Eduardo A. Escobar and Laurie E. Pearce deal with the "scribes of *Enūma Anu Enlil*" (*ṭupšarrū Enūma Anu Enlil*), members of the community of experts in Seleucid Uruk who read celestial signs. The aim and the structure of the study are clearly explained at the very beginning. Its focus is a particular *ṭupšar Enūma Anu Enlil*, Šamaš-ēṭir. The two authors re-create the cultural and socioeconomic dimension of the "community" of the *ṭupšar EAE* through Šamaš-ēṭir's production and activity. The analysis goes further to reconstruct Šamaš-ēṭir's connections with other members of this community through Social Network Analysis. In the authors' own words, they

> posit the existence of historically and socially engaged astronomers, *bricoleurs* who mediated the realms of intellectual and legal activity, and whose connections to the men of economic and social privilege served to promote their own standing in the world of Babylonian science. [264]

This essay is a wonderful piece of microhistory, seminal in its use of different sources, a theoretical frame, and integration of modern technologies.

Grant Frame's "The Date of the Accession of Nabonidus to the Throne of Babylon: A Reappraisal of the Evidence" [ch. 14] analyzes the assumed date of the accession of Nabonidus to the throne of Babylon (556 BC) and the problem of documents that, during the beginning of his reign, continue to be dated to the previous king, Labâši-Marduk. Frame presents the sources and the hypothesis on the overlapping between the two kings. He then proposes an analysis and arrangement of the written evidence considering that "Nabonidus was not recognized as king as early as previously thought

[8] The interpretation of incipits with raised "?" is speculative because the passages are fragmentary.

[9] To the references listed by Heeßel can be now added also Fincke 2016.

and that there is no clear proof that any overlap in dating according to the reign of Lābâši-Marduk occurred" [290].

Frame highlights that in the first year of a new king, the use of year names referring to the previous one is not unusual, though "there is no unequivocal proof of such an overlap" [293] between Nabonidus and Labâši-Marduk. The discussion in the body of the chapter about the provenance of the documents and a possible historical explanation for the city supporting Nabonidus' takeover is summarized in Frames' conclusion.

In "Intercalary Months in Achaemenid Elamite Administrative Documents from Persepolis" [ch. 15], Matthew W. Stolper focuses on the references to intercalary months in Elamite documents from Persepolis. He begins discussing the correspondence of Old Persian and Babylonian month systems in Bisutun and Persepolis, and even intercalary months in Babylonia and Persepolis. In the core of his essay, Stolper gives explicit and implicit references to intercalation in Persepolis records with an analysis of terms and expressions for intercalation and intercalary months. Among them a special focus is devoted to Elamite « beptika », which Stolper, accepting and substantiating a previous hypothesis, relates to Akkadian « nakāru », meaning "to change" and "to be hostile". Thus, « beptika » would mean "displaced", that is, "disordered" [307]. As for the introduction of a periodical intercalation cycle, Stolper states in the conclusions:

> [T]he Persepolitan evidence is consistent with the consensus that the nineteen-year cycle was not established in civilian use until about 500 BC and perhaps not until the early reign of Xerxes. [312]

Zoë Misiewicz's "The Importance of Experts: Agents in the Transfer of Astral Knowledge between Hellenistic Mesopotamia and the Greek-Speaking World" [ch. 16] discusses evidence for the transmission of Mesopotamian "astral" knowledge in the Hellenistic world through

> the migration of Near Eastern experts to Greek-speaking regions, where they could settle for the long term and gain renowned for their knowledge, potentially passing on their expertise to students over many years. [318]

Misiewicz analyzes three cases of contact between Greeks and Mesopotamian astrologers/astronomers. She begins with evidence for the reception of Mesopotamian knowledge by the Greeks, discussing the figure of Alexander through the narratives of Arrian's *Anabasis* and Diodorus Siculus' *Bibliotheca Historica*. Then she goes on to discuss the figure of Berossus, for whom Misiewicz observes critically "that later Greek and Roman writers constructed narratives about his behavior that must have seemed plausible to their readers" [322]. Thus, the analysis of the accounts of Berossus' views

"can clarify the question of who might be considered a Chaldaean expert among the Greeks and Romans" [323]. Finally, she discusses Antipatros, the *Chaldean astronomer*, who was born in the Syrian town of Hierapolis/Nappigu/and so on, and "admitted to citizenship in Homolion" according to a second century BC inscription from Larisa.[10]

Alexander Jones and John Steele ("Diodorus on the Chaldeans" [ch. 17]) comment on the passage of the second volume of Diodorus Siculus' *Bibliotheca Historica* on the Chaldeans.

Alan C. Bowen ("Observing Eclipses: An Optical Question in *Problemata* 15.11" [ch. 18]) discusses the *Problemata*, a Greek text that "is a living document that was not only read and copied but also transformed and adapted as it made its way through history" [359]. After a discussion of the general matters around the *Problemata*, Bowen analyzes an optical problem related to eclipses.

Mathieu Ossendrijver and Andreas Winkler ("Chaldeans on the Nile: Two Egyptian Astronomical Procedure Texts with Babylonian Systems A_1 and A_2 for Mercury" [ch. 19]) publish, and comment on, two Egyptian Demotic texts on ostraca that show a direct Mesopotamian influence on Egyptian astral sciences, i.e., the use of Babylonian System A_1 and A_2 "to compute Mercury's first and last evening or morning visibilities" [383].

Daryn Lehoux's "Clever Machines and the Gods Who Make Them: *The Antikythera Mechanism and the Ancient Imagination*" [ch. 20] presents a wide analysis of classical authors' speculations on "their geared astronomical models" [443].

The only addition that I can provide to these important studies, which are far beyond my competence, is the reference to Hannah 2017 and Jones 2017 on the Antikythera Mechanism.

The common but misleading idea of the existence of "astrologers" in ancient Mesopotamia is diffused in assyriological circles and is found here and there in this volume as well (e.g., "the writers had knowledge of astrology/astronomy—an astrologer had at some point posed the questions" [123]). The title *ṭupšar Enūma Anu Enlil* (scribe of the *Enūma Anu Enlil*) is not

[10] For the circulation of astronomical knowledge in the ancient world see the volume of collected essays edited in Steele 2016, to which Misiewicz has contributed with a study on Mesopotamian lunar omens in Justinian's Constantinople.
For earlier references to traveling experts in the Neo-Assyrian period, see also Nadali and Verderame 2014 and Verderame 2018.

documented in the Neo-Assyrian period or before, and it appears later. There is no evidence to support Misiewicz' claim that there were

> scholars working within the Mesopotamian tradition who had a particular knowledge of the astral sciences. In the Neo-Assyrian period, they were known as *ṭupšarrū Enūma Anu Enlil*, and the extensive sources that survive from that time present us with a detailed picture of their activities; surviving documentation for later periods is unfortunately less complete, though the title at least persists. [318]

The misleading use of the term "astrologer", even in seminal publications such as Parpola 1993, hampers a full understanding of the religious and cultural setting of celestial divination in ancient Mesopotamian cultures. The term and the figure of the astrologer, as a specialist in celestial signs, do not exist in Mesopotamia before the mid-first millennium BC. The astrological texts as well as the Neo-Assyrian letters and reports are written by scribes, "exorcists" (*āšipu*), "physicians" (*asû*), diviners (*bārû*), lamentation priests (*kalû*), and even temple personnel. Thus, we may wonder why the long tradition of celestial divination never had a specialist before the Neo-Babylonian period.

The volume presents a number of errors (e.g., page 115 Amat-beltiya [Amat-bēltīya] not Amat-belitya; page 122 *bāru* > *bārû*; page 123 n16 the tablet of *Enūma Anu Enlil* is the 17th, not the 7th; page 420 Givanni de Dondi for Giovanni de' Dondi), inconsistencies in long and contracted vowels (e.g., Nabu and Nabû; bēl but beltu; and so forth), and typos (some words underlined in chapter 1; a strange sign instead of a comma at page 3; highlighted text in chapter 18; irregular indentation in references) that suggest the manuscript needed some further polishing in the final editorial phase.

With its 20 chapters covering different topics and perspectives, this volume is an important contribution to the study of Ancient Mesopotamian divination and celestial sciences as well as of their transmission to other cultures.

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