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Los Angeles

Imperial Methods:
Using Text Mining and Social Network Analysis to Detect Regional Strategies in the Akkadian Empire

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Near Eastern Languages and Cultures

by

Sara Brumfield

2013

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ABSTRACT OF THE DISSERTATION

Imperial Beginnings:

Using Text Mining and Social Network Analysis to

Detect Regional Strategies in the Akkadian Empire

by

Sara Brumfield

Doctor of Philosophy in Near Eastern Languages and Cultures

University of California, Los Angeles, 2013

Professor Robert K. Englund, Chair

Building upon the traditional methods of philological analysis, this dissertation incorporates emerging technologies in text-mining and social network analysis as a new approach for analyzing large blocks of cuneiform text corpora. Working within the Classical period of the Old Akkadian dynasty, the height of Empire's reach and influence, these digital tools are deployed to ascertain the level of administrative similarity or difference between the major urban centers. The cities of the Diyala are used as a baseline specifically because of their peaceful relationship with the Akkadian Empire. These parameters explore whether the political relationship (peaceful or rebellious) affected the degree or extent of the Empire's administrative presence in its various territories. Overall, the results indicate that the Akkadian kings practiced similar policies throughout Mesopotamia. The imperial administration was only minimally

involved with the daily administration of these cities; they sought mainly refined or finished goods and left the local government to manage the means of production.

The dissertation of Sara Brumfield is approved.

Elizabeth F. Carter

Amanda Podany

Robert Keith Englund, Committee Chair

University of California, Los Angeles

2013

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List of Abbreviations

AAS	=	Archives Administratives Sumériennes
Adab	=	Sargonic Inscriptions from Adab
AfO	=	Archiv für Orientforschungen
AHw	=	Akkadische Handwörterbuch
AIA	=	Australian Institute of Archaeology
AIHA	=	The Ancient Inscriptions in Himrin Area
AJA	=	American Journal of Archaeology
Anonym	=	Anonymous
AnOr	=	Analecta Orientalia
AoF	=	Altorientalische Forschungen
AOAT	=	Alter Orient und Altes Testament
AOS	=	American Oriental Society
ARCANE	=	Associated Regional Chronologies for the Ancient Near East and the Eastern Mediterranean
ArOr	=	Archiv Orientální
AS	=	Assyriological Studies
As.	=	Tell Asmar
ASCII	=	American Standard Code for Information Interchange
ASJ	=	Acta Sumerologica
ATF	=	ASCII text format
AuOr	=	Aula Orientalis
BAR	=	Biblical Archaeological Review
BASOR	=	Bulletin of the American Schools of Oriental Research

BBVO	=	Berliner Beiträge zum Vorderen Orient
BCE	=	before common era
BIN	=	Babylonian Inscriptions in the Collection of J. B. Nies
BiOr	=	Bibliotheca Orientalis
BM	=	British Museum
BSA	=	Bulletin on Sumerian Agriculture
CAD	=	Chicago Assyrian Dictionary
CANE	=	Civilziations of the Ancient Near East
CDLI	=	Cuneiform Digital Library Initiative
CDLJ	=	Cuneiform Digital Library Journal
CDOG	=	Colloquien der Deutschen Orient-Gesellschaft
CE	=	common era
cf.	=	compare further
col.	=	column
CST	=	Catalogue of Sumerian Tablets in the John Rylands Library
CT	=	Cuneiform Texts from Babylonian Tablets in the British Museum
CCT	=	Cuneiform Texts from Cappadocian Tablets
CUSAS	=	Cornell University Studies in Assyriology and Sumerology
Di	=	Diyala
DP	=	Documents présargoniques
DPA	=	Etude de Documents de la Période d'Agade
ED	=	Early Dynastic Period
ed(s).	=	editor(s)

e.g.	=	exempli gratia
Eš	=	Ešnunna
et al.	=	et alii
etc.	=	etcetera
FAOS	=	Freiburger altorientalische Studien
ff.	=	following
fn.	=	footnote
Fs.	=	festschrift
Fs. Civil	=	Velles Paraules: Ancient Near Eastern Studies in Honor of Miguel Civil on the Occasion of his Sixty-Fifth Birthday
Fs. Hallo	=	The Tablet and the Scroll: Near Eastern Studies in Honor of William W. Hallo.
Fs. Kienast	=	Festschrift für Burkhart Kienast zu seinem 70. Geburtstage dargebracht von Freunden, Schülern, und Kollegen
Fs. Kraus	=	Zikir Šumim: Assyriological Studies Presented to F. R. Kraus on the Occasion of his Seventieth Birthday
Fs. Oelsner	=	Assyriologica et Semitica: Festschrift für Joachim Oelsner anlässlich seines 65. Geburtstages am 18 Februar 1997
Fs. Owen	=	Why Should Someone Who Knows Something Conceal It? Cuneiform Studies in Honor of David I. Owen on His 70th Birthday
Fs. Porada	=	Insight Through Images: Studies in Honor of Edith Porada
Fs. Renger	=	Munuscula Mesopotamica: Festschrift für Johannes Renger
Fs. Röllig	=	Ana šadî Labnāni lū allik: Beiträge zu altorientalischen und mittelmeerischen Kulturen.
Fs. Sjöberg	=	Dumu-e$_2$-dub-ba-a: Studies in Honor of Åke W. Sjöberg

Fs. Westenholz	=	Akkade is King: A Collection of Papers by Friends and Colleagues Presented to Aage Westenholz on the Occasion of his 70th Birthday, 15th of May 2009.
Fs. Wilcke	=	Literatur, Politik und Recht in Mesopotamien: Festschrift für Claus Wilcke
g.	=	gram
Ga	=	Gasur
GAG	=	Grundriss der Akkadischen Grammatik
GN	=	geographic name
ha.	=	hectare
HANES	=	History of the Ancient Near East Studies
HMA	=	Hearst Museum of Anthropology
HSAO	=	Heidelberger Studien zum Alten Orient
HSS	=	Harvard Semitic Studies
i.e.	=	id est
Ist M	=	Istanbul Museum
ITT	=	Inventaire des Tablettes de Tello
JAC	=	Journal of Ancient Civilizations
JAOS	=	Journal of the American Oriental Society
JCS	=	Journal of Cuneiform Studies
JEOL	=	Jaarbericht Ex Oriente Lux
JESHO	=	Journal of the Economic and Social History of the Orient
JNES	=	Journal of Near Eastern Studies
JSS	=	Journal of Semitic Studies
Ki	=	Kiš

kg.	=	kilogram
km.	=	kilometer
LB	=	de Liagre Böhl Collection, Netherlands Institute for the Near East, Leiden, Holland
ll	=	lines
L'uomo	=	L'uomo cominciò a scrivere. Iscrizioni cuneiformi della Collezione Michail
MAD	=	Materials for the Assyrian Dictionary
MARI	=	Mari, Annales de Recherches Interdisciplinaires
MC	=	Mesopotamian Civilizations
MCS	=	Manchester Cuneiform Studies
MDP	=	Mémoires de la Délégation en Perse
MM	=	Monserrat Museum
MSL	=	Materials for the Sumerian Lexicon
MVN	=	Materiali per il Vocabulario Neosumerico
N.A.B.U.	=	Nouvelles Assyriologiques Brèves et Utilitaires
NEH	=	National Endowment for the Humanities
Nik	=	Drevnosti Vostocnyja
Nisaba	=	Studi Assiriologici Messinesi
no.	=	number
OAIC	=	Old Akkadian Inscriptions in Chicago Natural History Museum
OBO	=	Orbis Biblicus et Orientalis
obv.	=	obverse
OIC	=	Oriental Institute Communications

OIP	=	Oriental Institute Publications
OIS	=	Oriental Institute Seminars
OLZ	=	Orientalistische Literaturzeitung
OrAn	=	Oriens Antiquus
OrNS	=	Orientalia Nova Seria
OSP	=	Old Sumerian and Old Akkadian Texts in Philadelphia Chiefly from Nippur
PBS	=	Publications of the Babylonian Section (University of Pennsylvania)
PN	=	personal name
Quad Sem	=	Quaderni di Semitistica
RA	=	Revue d'Assyriologie
RAI	=	Rencontre Asssyriologie Internationale
rev.	=	reverse
RGCT	=	Répetoire Géographique des Textes Cunéiformes
RIME	=	Royal Inscriptions from Mesopotamian, the Early Periods
RlA	=	Reallexikon der Assyriologie
RTC	=	Recueil des tablettes chaldéennes
SAKF	=	Sumerische und akkadische Keilschriftdenkmäler des Archäologischen Museums zu Florenz
SEb	=	Studi Eblaiti
SEL	=	Studi Epigrafici e Linguistici sul Vicino Oriente Antico
SKL	=	Sumerian King List
SMEA	=	Studi Micenei ed Egeo-Anatolici

SNA	=	social network analysis
sq. m.	=	square meter
Studies Tadmor	=	Ah, Assyria…: Studies in Assyrian History and Ancient Near Eastern Historiography Presented to Hayim Tadmor
Studies Winter	=	Ancient Near Eastern Art in Context: Studies in Honor of Irene J. Winter.
TCBI	=	Tavolette cuneiformi di Adab delle collezioni della Banca d'Italia
TCS	=	Texts from Cuneiform Sources
TMM	=	Third-Millenium Miscellany of Cuneiform Texts (CUSAS, forthcoming)
TSA	=	Tablettes Sumeriennes Archaiques
TUAT NF	=	Texte aus der Umwelt des Alten Testaments Neue Folge
Tutub	=	Die Texte Der Akkade-Zeit 1, Das Diyala-Gebiet: Tutub
UCP	=	University of California Publications
UET	=	Ur Excavations Texts
unpub.	=	unpublished
USP	=	Umma in the Sargonic Period
Ur III	=	Third Dynasty of Ur
vol.	=	volume
VS	=	Vorderasiatische Schriftdenkmäler
WF	=	Wirtschaftstexte aus Fara
WML	=	World Museum Liverpool
WO	=	Welt des Orient
YOS	=	Yale Oriental Series, Babylonian Texts
ZA	=	Zeitschrift für Assyriologie

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Winnie, patiently allowed me to work during our infrequent visits together, to maintain radio silence during the busy months, and endured the self-imposed poverty of a graduate student. To my family, I thank them for the unwavering support and formidable enthusiasm. I thank my mother for imparting to me a fraction of her boundless creativity, and my father for teaching me self-discipline. My sister I thank for continually reminding me to take the time to enjoy the simple pleaures in life. And finally, to Jared Wolfe I owe an incalculable debt of gratitude and appreciation for the years spent learning and growing together.

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Chapter One

1.0. Introduction

Prior to the rise of the Akkadian kings, Mesopotamia was a network of city-states engaged in a closed network of shifting alliances between the major urban centers of the third millennium. With the incursion of the northern kings of Akkade into southern Mesopotamia the political landscape was forever altered. Through their unprecedented military force, the kings of Akkade were able to expand their hegemonic rule and consolidate the disparate city-states under one ruler during a single dynasty. Paired with the military aptitude of these kings was the considerable ability of their administrators best attested under the reign of Narām-Suen, who superintended the widespread standardization in the Mesopotamian bureaucracy. These reforms directly challenged the authority and legitimacy of inveterate local institutions. This conflict is the nexus of the power struggles that permeated the social, political and economic realms in a bid for imperial domination over Mesopotamia by the Akkadian kings.

The imperial polity crafted by the Akkadian dynasty moved through several phases of development as it increased its reach and grip. During the initial period of expansion the kings began turning the wheels of war, conquering territories outside of their socio-political zone. With such conquest comes the inevitable burden of integration and consolidation of the conquered polities. The strategic or isolated incursions into foreign territories to acquire immediate resources become less appealing when compared to the steady wealth regularly extracted from integrated, taxed, tribute-paying dependents. However, this asymmetrical siphoning of resources was unsustainable. In time, the unchecked burdens and stresses on this imperial system were

amplified, leading to opportunities for ruptures. Under the fatal admixture of external military threats and internal fracturing, the dynasty of Akkade fell never to be revitalized.

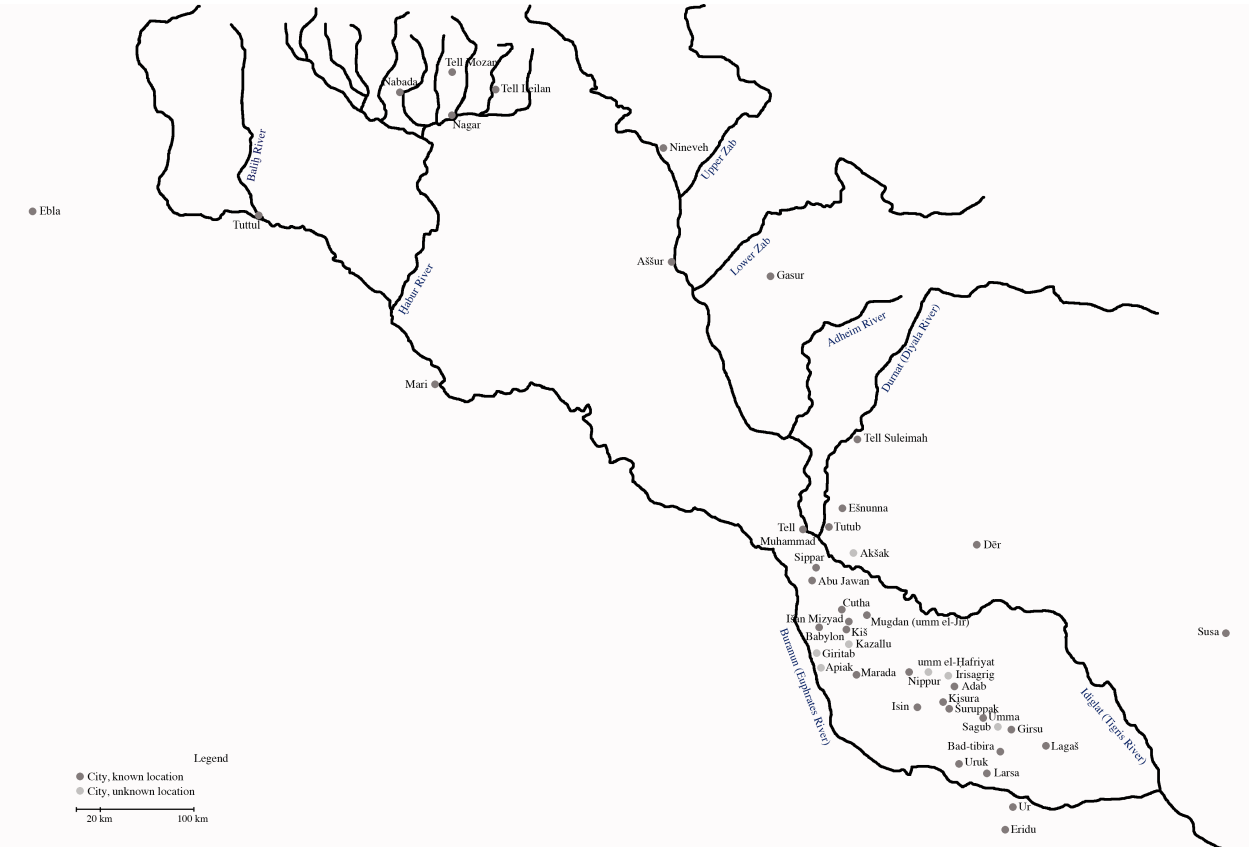

Figure 1: Map of Mesopotamia

The initial and final phases of an empire lend themselves to questions of formation and collapse, while the intermediate period of consolidation is better suited to tracking evolving strategies of imperial administration; rulers are purposefully disrupting and imposing on established local practices during this integration phase driven by a basic need for standardization. Empires typically incorporate their conquered territories through a mixture of force and diplomacy. However, there are varying degrees of incorporation; imperial rulers choose to what extent they disrupt pre-existing institutions and local authorities. These choices can be motivated by numerous factors including established political conditions, the extent of resistance to the empire, resource harvesting or strategic location (Sinopoli 1994: 160-161).

Despite the variation in motivating factors for individual cases of empire, the desired result is always control of resources as a means to wealth. So the question becomes, how did the Akkadian kings during the consolidation phase exert control over their dependencies? Which methods or techniques did they choose to deploy? And were these strategies applied universally, or did the Akkadian kings tailor their policies to the local political climate?

From the administrative records, historians are able to reconstruct a large number of seemingly routine transactions throughout the many levels of Mesopotamian society, penetrating the lower strata of the socio-economic classes. Therefore, this genre offers an excellent opportunity for understanding imperial policies implemented at the local level. In order to focus on the mechanisms of imperial control during the consolidation phase only administrative texts defined as Classical (e.g. the reigns of Narām-Suen and Šar-kali-šarrī) will be included in this study (Postgate 1994:10; Schreiber 2001: 74).[1] By interrogating the textual sources, a coherent imperial agenda towards extant local government and resources can be recovered from this period of consolidation, which will supplement the broader investigations into the nature and behavior of ancient empire.

1.1. The Political History of the Old Akkadian Period

The Sumerian King List outlines the kings of the Sargonic dynasty with some variation (Jacobsen 1939; Steinkeller 2003b; Marchesi 2010). Unfortunately, contemporary documents do not help clarify the extent or even order of every reign. The generally accepted sequence and reigns of kings are as follows:

[1] Fortunately, the majority of Old Akkadian texts are Classical (Foster 1982e; Michalowski 1987: 57; Steinkeller 1993: 127; Westenholz 1999: 49; Hasselbach 2005: 17).

King	Tenure	Absolute Chronology	Internal Chronology
Šarru-kēn	56 (or 37)[2] years	2334 – 2279 BCE[3]	Early Sargonic
Rīmuš	9	2278 – 2270	Middle Sargonic
Maništūšu	15 (or 7)[4]	2269 – 2255	
Narām-Suen	56 (or 37)[5]	2254 – 2218	Middle/Classical Transition
Šar-kali-šarrī	25	2217 – 2193	Classical Sargonic
I(r)gigi,[6] Imi, Nanûm, Elulu / Gutian Hiatus	3	2192 – 2189	Late Sargonic
Dudu	21	2189 – 2169	
Šū-Durul	15	2168 – 2154	

Table 1: Chronology of the Akkadian Kings

1.1.1. Pre-Classical Kings

The Old Akkadian period is divided into five periods (Early, Middle, Middle/Classical Transition, Classical and Late) based on the textual evidence, and two periods based on the archaeological evidence (Pre-Classical and Classical). A conglomeration of features introduced during the reign of Narām-Suen is the watershed dividing texts and their events into Pre-Classical (Early and Middle) or Classical Sargonic. Therefore, the Pre-Classical kings are Šarru-

[2] B. Foster argues that the traditional figure of 56 years was misread from an original 37-year reign (1982b: 153). An Ur III exemplar of the Sumerian King List (SKL) offers a deviant reconstruction whereby Šarru-kēn only ruled 40 years and was followed by Maništūšu, not Rīmuš (Steinkeller 1993). Old Babylonian literary tradition consistently maintains Šarru-kēn, Rīmuš, Maništūšu; given the constancy of these sources against the single abberant attestation, I prefer to maintain the "traditional" order, at least until the Ur III text can be corroborated.

[3] This chronological scheme follows the middle chronology of the Old Akkadian Period (Brinkman 1977).

[4] It is tempting to see a conflation or confusion, similar to that of Šarru-kēn and Narām-Suen, in the SKL tradition, where Rīmuš and Maništūšu reigned a collective 15 years with reigns of 8/7 or 9/6 years individually. This paradigm is my attempt at a "short chronology" of the Old Akkadian period, which helps alleviate some of the problems proffered in the following footnote.

[5] Posited by T. Jacobsen based on the Weld Blundell Prism, which calculates a total of 181 years for the dynasty of Akkade. Given the lacunae in this witness, Jacobsen reconstructed 37 years for Narām-Suen's reign (1939: 112, fn. 251). A. Westenholz has argued that 37 years is preferable based on the unrealistic lifespan otherwise required of Enḫeduanna, who began her tenure in Ur under her father Šarru-kēn, not to be replaced until Narām-Suen's reign by Enmeanna, her great-great-niece (2000: 554-555). Additional potential problems in the chronology are the lifespans of Meskigalla, governor of Adab under both Lugalzagesi and Rīmuš, and Uru-KA-gina mentioned in the Maništūšu Obelisk. Could this be the same Uru-KA-gina of Lagaš defeated by Lugalzagesi in the preceding ED IIIb period?

[6] Possibly the same figure as a one ir_3-gi_4-gi_4 in MCS 9, 252, and additional references from Umma in Westenholz (1999: 57, fn. 220).

kēn, Rīmuš and Maništūšu followed by the Classical Sargonic kings Narām-Suen and Šar-kali-šarrī. Those kings after the Gutian Hiatus are generally referred to as Late Akkadian and were relegated to the margins of Mesopotamian politics.

1.1.1.1. Šarru-kēn: *šar tamḫārim*[7]

As the eponymous founder of the dynasty and the Akkadian empire, Šarru-kēn[8] achieved iconic and legendary status in Mesopotamian literature. In fact, the current reconstruction of Šarru-kēn's life has been cautiously extracted from Old Babylonian, Middle Babylonian, Neo-Assyrian and Neo-Babylonian accounts.[9] The contemporary Old Akkadian evidence is sparse and largely limited to the monumental and administrative genre. Šarru-kēn's long reign certainly began before his consolidation of southern Mesopotamia when he was the ruler of a small northern state (Sallaberger 2004: 25). Later tradition details how Šarru-kēn, "son of a nobody," began as a cup-bearer (Sumerian: sagi; Akkadian: *šāqûm*) in the court of Ur-Zababa, king of Kiš.[10] Regardless of the precision of this tradition, it seems clear that Šarru-kēn had a special

[7] "King of Battle."

[8] This normalization follows the vocalic phonological rules of Old Akkadian outlined by R. Hasselbach (2005: 44-45). His namesake appears in the Hebrew Bible as Sargon / סרגון.

[9] The earliest literary traditions of Šarru-kēn's legendry are attested in the Old Assyrian period with "Adad is King!" (Foster 2002; Dercksen 2006; Alster and Oshima 2007; [J.G.] Westenholz 2007), followed in the Old Babylonian period with "I, Sargon", "Rise to Power", the *Res Gestae Sargonis* tales of "Sargon the Conquering Hero" and "Sargon the Lion" as well as the so-called Sargon Letters ([J.G.] Westenholz 1997; Sommerfeld 2009: 48). Much like the literature of the period, the Old Babylonian omens emphasize Sargon's military prowess (Sommerfeld 2009: 47). Several of the Old Babylonian tales persist into the Middle Babylonian period, where new tales also appear, namely "King of Battle"; a particularly interesting Neo-Assyrian development is the popular "Sargon Birth Legend" (Lewis 1980; Franke 1995: 837; Westenholz 1997; Kuhrt 2003).

[10] Many of the motifs in the stories of Šarru-kēn's early life are echoed in several other powerful political figures, namely David, Moses, Zoroaster, Krishna, Romulus and Remus and Cyrus the Great (Lewis 1980: 149-209; Kuhrt 2003: 352-353; Podany 2010: 44). This pattern casts doubt on the "historical kernel" of Šarru-kēn's myths, but scholars still differ in their degree of acceptance (Kuhrt 2003: 357). The position of the cup-bearer (Sumerian: sagi; Akkadian *šāqûm*) is at least partially military in nature at Mari and in the Old Assyrian "Adad is King!" tale ([J.G.] Westenholz 2007: 23). This military context for Šarru-kēn's origins fits well for both his life and the characteristics of his dynasty.

relationship with Kiš based on the claims of his grandson, Narām-Suen.[11] Aside from piecemeal biographic bits cautiously extricated from myth and legend, very little is known for certain about Šarru-kēn's life and background.

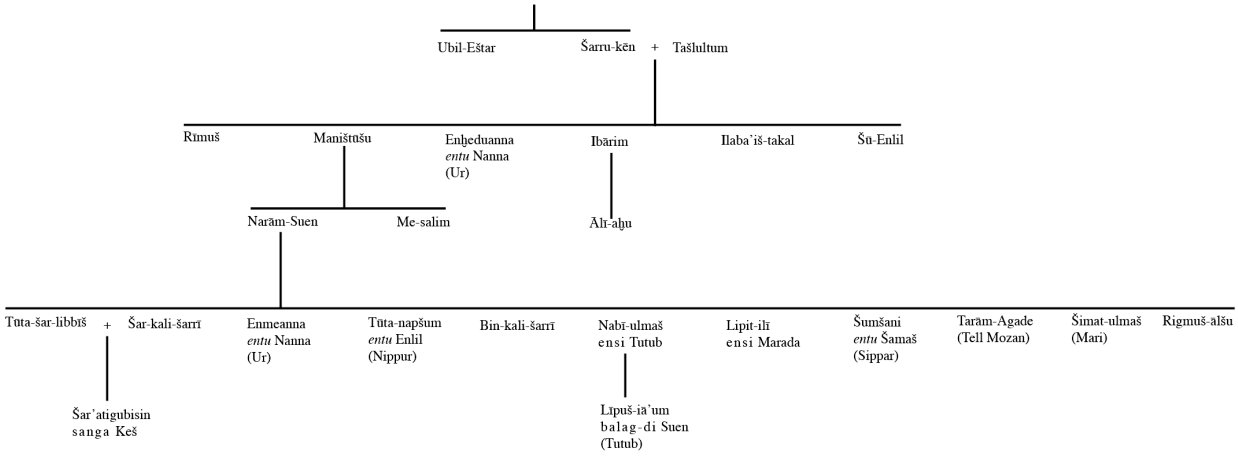

Figure 2: Sargonic Dynasty Geneaology[12]

Upon his conquest of the southern city-states there are various official documents that narrate his military and political career. Three year-names are attributed to Šarru-kēn, which detail his campaigns in Elam and Simurrum in the east. From Susa, the fortunate repository of many early royal inscriptions, are several fragments of a victory stele of Šarru-kēn. However, the details of the conquered land or enemies are not preserved. Circumstantial evidence assigns the year name recording the destruction of Girsu to Šarru-kēn (Visicato and Westenholz 2010: 7).[13] A fifth year name does not explicitly state the king who destroyed Mari, but Šarru-kēn is

[11] See Narām-Suen's claims in the *Great Rebellion* (ll. 16-23). Note also D. O. Edzard's translation of Šarru-kēn's claim in an Old Babylonian inscription that he "restored Kiš to its place," possibly a necessary effect of Enšakušanna's destruction (1991).

[12] To this family tree could be added Šū-megri a judge in Kazallu (BIN 8, 121) (Foster 1982d: 37), Dada (HSS 10, 109; MAD 5, 67), Atu (RTC 254), Ibizu (Sippar Stone), Aba-zi (HSS 10, 175) and Alzi (OSP 2, 170). The exact position of these individuals within the Sargonic family tree is not entirely certain since the reference of lugal ("king") in the texts if often ambiguous.

[13] CUSAS 11, 234. Possibly related is a disturbed section of a personal letter from Girsu written during the reign of Narām-Suen: u_4 šar-ru-gi […] ki-sur-ra lagaš^{ki} / Since the time of Šarru-kēn … the border of Lagaš (FAOS 19 Gir 26 obv. 6-7).

assumed based on the destruction of Palace I early in the Sargonic period and its subsequent repopulation in the early or middle Sargonic period (Lebeau 1985: 135; contra Archi and Biga 2003).[14]

Whether Šarru-kēn conquered the city of Ebla has led to no small amount of confusion among scholars, because Narām-Suen, at least 50 years later, claims the same victory, but states that it is something not previously accomplished. This has devolved into categorical either/or scenarios, where only Šarru-kēn *or* Narām-Suen possesses the authentic account. However, there is room in the historical record for a third narrative.[15]

Prior to the Narām-Suen's reign there is evidence of a royal Akkadian administrative entity at Tell Brak (Oates 2011: 102-103).[16] Since neither Rīmuš nor Maništūšu make claims on this area, Šarru-kēn is the natural choice. Therefore, I suggest that Šarru-kēn did in fact make initial forays into the western lands.[17] Šarru-kēn need not directly conquer each city, but rather

[14] Similar conjecture attributes an excavated macehead from the E-nunmaḫ at Ur to Šarru-kēn based on the common titulary "king of Uruk and Ur" (RIME 2.1.1.4) (Gadd 1928: 3; but see the cogent counter-argument by Hirsch [1963: 2]).

[15] A. Westenholz has also hinted at this third narrative (Pomponio, Visicato and Westenholz 2006: 44), as has J. Margueron (2004: 310-312).

[16] The limited imposition of Akkadian culture upon the local Tell Brak population is evidenced in the complete lack of southern Akkadian pottery types—the pottery continues to be locally-made and styled (Oates 2011: 103). Conversely, in levels from Narām-Suen's time intrusive elements become visible (104). The completed Akkadian complex includes three areas: the "palace" area (most likely a storehouse of military barracks) with an administrative building, private houses and a scribal school (Area CH and ER); an administrative center (Area SS); a temple complex (Area FS) (MacMahon 2012: 654-655).

[17] This hypothesis is supported by W. Sallaberger's reconstruction of late third millennium chronology, which leads him to conclude that the "father" mentioned in the late Ebla texts refers to Šarru-kēn (2004: 24; 2007; 2009). This appellative suggests submission but not necessarily hostility. Sallaberger's calibrated Middle Chronology places the *destruction* of Ebla during the reign of Šarru-kēn (2009: 332), however, the question of absolute chronology in early Mesopotamia is still unsettled. Sallaberger's chronological scheme is represented below (after 2009: 329, Table 1):

may have only gained the submission of the capital (Mari), acquiring subject polities through proxy (Ebla, Nagar, Nadaba). Following the reconstruction of A. Archi and G. Biga (2003), Mari thoroughly decimated Ebla prior to Šarru-kēn's intrusion into the region. This left Ebla under the control of Mari deprived of political independence. In this scenario, Šarru-kēn need only secure Mari in order to also control Ebla;[18] this was the pattern for his acquisition of southern Sumer and the eastern lands of Elam (Potts 1999: 103). Morever, Šarru-kēn's inscriptions—via Old Babylonian scribes at Nippur—do not describe direct conquest, but rather pre-emptive submission by Mari, Ebla and Yarmuti:

RIME 2.1.1.1: Mari *u* Elam *maḫriš* Šarru-kēn *šar mātim izzazūni* /
lu Mari u lu Elam igi Šarru-kēn lugal kalammakaše isugeš /
(The man of) Mari and Elam stood before Šarru-kēn, king of the land.

RIME 2.1.1.2: Mari *u* Elam *maḫriš* Šarru-kēn *šar mātim izzazūni* /
Mari and Elam stood before Šarru-kēn, king of the land.

RIME 2.1.1.11 & 12: *mātam elītam iddiššum* Mari Yarmuti Ebla *adīma qišti erēnim u šadi kaspim* /
Mari Yarmuti Ebla tir ^{ĝeš}erin ḫursaĝ kugaše /
He (Dagān) gave to him (Šarru-kēn) the Upper Land: Mari, Yarmuti and Ebla as far as the Cedar Forest and Silver Mountains.

Ebla years	Ebla rulers	Mari rulers	Sargon	Mesopotamia
until −43	Igrishhalab	Iblul'il		
−42 to −36	Irkabdamu 1-7			
−35	Ibrium 1/ Ish'ardamu 1	Ikun'ishar		
	Ibrium 2(?)	Hidar 1		
−17	Ibbizikir 1/ Ish'ardamu 19			
(ca. −15 to −20)			ca. Sargon 1	ca. Urukagina 1, Lugalzagesi 1
0	Ebla destroyed	ca. Hidar 35	ca. Sargon 15-20	
		Ishqimari 1 to 9 attested at Mari		
ca. +10		Mari destroyed	ca. Sargon 25-30	Lugalzagesi defeated
(ca. +20 to +25)			Sargon 40 (final year)	

[18] As J. Margueron indicates, Šarru-kēn places more emphasis on Mari than Ebla, while Narām-Suen focuses more on the city of Ebla than Mari (2004: 312, fn. 16). This asymmetry accords well with the shifting political power in Syria at this time and the schema presented above.

This language of submission contrasts directly with the colorful descriptions of conquest and victory over Ur, Umma and Uruk in the south. Instead the phrasing suggests that the local rulers of these western lands forestalled Šarru-kēn's hostile advances by capitulating in advance. Therefore, Narām-Suen could have conquered Ebla decades after the internecine conflict between Ebla and Mari.[19] The corresponding archaeological levels at Ebla reflect a city that is reduced in size and power, certainly making its conquest significantly easier for Narām-Suen than for his grandfather, Šarru-kēn. This narrative accounts for the seemingly contradictory statements of these two mighty kings as well as the archaeological evidence of Mari and Ebla.

Figure 3: Šarru-kēn's Stele of Ištar (Louvre Sb 2/6053) after L. Nigro 1998, Fig. 1

This confusion between Narām-Suen and Šarru-kēn appears typical since later generations of Mesopotamians both juxtaposed and conflated these two figures as great kings. However, based on both archeological and textual indicators each maintained a very different type of relationship with these western cities—Šarru-kēn being identifiably less intrusive and disruptive to local institutions.

The royal inscriptions, almost exclusively of Old Babylonian copy, record Šarru-kēn's conquests across Mesopotamia;[20] however, the order of such campaigns is uncertain. Yet, as A. Westenholz indicates, the campaigns in Elam must postdate Šarru-kēn's conquest of the south

[19] Narām-Suen's Eblaite-styled military headdress on the Pir Hussein Stele was likely adopted after his conquest of Ebla (Suter 2007: 300, fn. 45).
[20] These later copies appear to be generally valid (Buccellati 1993).

since Elam appears in year names from Nippur (1984b: 78). Likewise, it is reasonable to assume that Šarru-kēn must have had northern Babylonia under his control in order to mount a successful assault on the whole of southern Sumer; only after such consolidation would the polities in Iran deem this new empire a significant threat (Sommerfeld 2009: 46). Therefore, it is likely his campaigns progressed from the immediate area surrounding his capital of Akkade in northern Babylonia towards the growing amphictyony under Lugalzagesi in the south.[21] This expansion in turn solicited opposition from the eastern lands of Elam and Marḫaši/Paraḫšum. Šarru-kēn's interest in the western region appears to be purely mercantile and would thus come about only after secure relations were established providing the means to promote long-distance trade.[22]

This novel period of imperial expansion was balanced by continuity in the culture of Mesopotamia. This conservatism was likely necessary to balance the disruptive nature of Šarru-kēn's new imperial model, which is evidenced in his imposition of the Akkadian governors (Sumerian: $ensi_2$; Akkadian: *iššiakkum*) in formerly locally appointed positions.[23] Classically understood innovations of Šarru-kēn, such as the form of kingship encapsulated by the title

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[21] Several scholars have mused over the ED IIIb year name: mu en-š[a_3-$kuš_2$-an-na] ag-[g]$a^?$-de_3^{ki} |TUN_3xKAR_2| bi_2-si_3-ga / Year: Enšakušanna placed defeat on Akkade. This mention of Akkade has led some to suggest that perhaps the southern Sumerian coalition struck the first blow against Šarru-kēn (Sallaberger 2004: 18). In fact, Šarru-kēn's policies may have been in response to or dependent upon the growing threat of Sumer under Lugalzagesi given the contemporary situation of their respective expansions.
Incidentally, L. Nigro argues that Šarru-kēn's Stele of Ištar (Louvre Sb 2/6053) is in fact a record of Šarru-kēn's defeat of Lugalzagesi (1998: 90-93).

[22] J. G. Westenholz emphasizes the increasingly prominent role that booty and foreign plunder had in royal Old Akkadian ideology expressed in the monumental and votive inscriptions (1998: 47, 49). Additionally, Nigro argues that the features of the Šarru-kēn's Stele of Ištar (Louvre Sb 2/6053) embeds a clear message of an extending, dynamic, successful commercial influence under the king's rule (1998: 86).

[23] RIME 2.1.1.1, ll. 88-91. But note the caveat by B. Foster (2000: 311), which is echoed by E. Cripps (2010: 12), that royally-appointed governors may have born Sumerian names still. Overall, the definitive evidence for this deeply entrenched traditional view is scant. It is also uncertain if royally appointed governors were of the scribal class, as seems to be the general pattern during the Old Akkadian and Ur III periods (Yuhong 1995: 127-128).

lugal kiš, the focus on Inanna-Ištar as a king-maker, and the installation of his daughter as en-priestess of Nanna at Ur actually have their origins in the preceding ED IIIb period (Hirsch 1964; Maeda 1981; Winter 1987; Maeda 2005).[24] Moreover, the material culture of the early Sargonic period is scarcely distinguishable from its predecessors (Gibson 1981: 77-79; Gibson 1982: 531; MacMahon 1993: 10-11; Gibson and MacMahon 1995: 1).

The general impression from the textual and archaeological remains is that Šarru-kēn had little interest in direct control over his conquered territories. Rather, he emphasizes aspects of trade, particularly long-distance trade to Magan, Meluḫḫa, Dilmun and the Silver Mountains. In fact, Šarru-kēn's primary motive for such unprecedented expansion might have been the desire for wealth through trade, not power through subjugation (Mann 1986: 135; MacMahon 2012: 652).[25]

1.1.1.2. Rīmuš: *tāḫāzam Šumerim admādiš 3 išār*[26]

Rīmuš[27] is purported to be the younger brother of Maništūšu, who succeeded Rīmuš on the throne of Akkade.[28] If Rīmuš did in fact directly follow Šarru-kēn, he also faced rebellion and

[24] C. Suter has suggested that Enḫeduanna was installed as a zirru priestess, the traditional Early Dynastic title for Nanna's high priestess. The transition to en-priestess she credits to Narām-Suen as part of his creation of a "new image of kingship" (Suter 2007: 321).
[25] As M. T. Larsen points out, many of the Akkadian conquests were directed towards areas that produced coveted raw materials (1979: 79).
[26] "He was three times victorious over Sumer."
[27] W. Sommerfeld artfully detangled the disparate etymologies of this name, and found in the Old Akkadian context it should be translated as "His/her wild bull" (2003b). The pronominal antecedent is ambiguous, but he suggests possibly Šarru-kēn, Ištar or Ilaba.
[28] For the suggestion that Rīmuš and Maništūšu were twins see W. Hallo 2010 (229). P. Steinkeller argues that the literal translation of Maništūšu's name as "Who is with him?" has erroneously led to the speculation of his being a twin with Rīmuš. Steinkeller prefers the nuanced translation "There is no one with him / He has no rival," which specifically indicates his right to rule (1987-1990: 334). I speculate that Rīmuš and Maništūšu had different mothers and that Šarru-kēn's selection for his successor was based on the maternal lines of his sons. Compare Darius I's selection of Xerxes, instead of his eldest son Atrobazanes; Xerxes was fortunate enough to be born of a maternal line that did not pose the same political threat that the maternal line of Atrobazanes did to Darius' household (Kuhrt 2001: 109-110).

opposition from the east and the south. Given the sheer quantity of people Rīmuš claims to have slaughtered or displaced through his military campaigns in Sumer, it is not surprising that his successor, Maništūšu, did not have to face opposition in the south. The level of devastation described would have required decades to recover from. The events Rīmuš recorded in his inscriptions clearly indicate that the kings were still working to expand and control their territorial acquisitions.

Textual evidence from Rīmuš's reign is comprised of an archive of 102 tablets from Umma (Foster 1982b),[29] a victory stele from Lagaš (Foster 1985)[30] and various votive and royal inscriptions scattered throughout Mesopotamia in commemoration of his victorious quelling of rebellions. A lone year name is attributed to Rīmuš based on his corroborating royal inscriptions that boast of his defeat of Adab.[31]

Rīmuš began his reign by defeating a coalition of three Sumerian polities: Adab and Zabala, Umma and KI.AN, and Lagaš and Ur.[32] G. Buccellati has reconstructed the sequence of these three campaigns beginning with Lagaš/Ur then moving north to Adab/Zabala and finally

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Additional objections to the ordering of Rīmuš and Maništūšu in historical reconstruction is the statement by Maništūšu regarding "all the lands…which my father Sargon left" in the Neo-Babylonian Cruciform Monument. While Steinkeller contends that this text is genuine, it is generally regarded as a forgery (1987-1990: 335).

G. Visicato adopts the revised order of Šarru-kēn, Maništūšu, Rīmuš, Narām-Suen, Šar-kali-šarrī in his edition of Sargonic tablets from Adab where he outlines his paradigm of Early, Middle, Classical and Late Sargonic textual periods (Pomponio, Visicato and Westenholz 2006: 72). This is followed by M. Maiocchi in his edition of Classical Sargonic texts from Adab (2009: xxi).

W. Sallaberger has suggested that the former synchronism of Meskigalla of Adab with Lugalzagesi and Rīmuš is no longer valid. He bases this interpretation on the presence of two distinct Meskigalla figures at Adab (Sallaberger 2007: 424). To me, the coincidence of two separate men named Meskigalla operating at governor in Adab seems too great. I would suggest revising the internal chronology, which is already on uncertain grounds before adopting such a great coincidence.

[29] A. Westenholz contests this dating of the archive and B. Foster's interpretation that the archive belonged to a prisoner-of-war camp established by Rīmuš (1999: 41, fn. 126).

[30] W. Sommerfeld remains unconvinced that this stele belongs to Rīmuš (2007: 374).

[31] W. Sommerfeld suggests that this year name belongs to a Pre-Sargonic king (2007: 374).

[32] RIME 2.1.2.4, ll. 4-7: *su$_2$-ra-ma šar-ru-tam$_2$* ^{d}en-lil$_2$ *i-di$_3$-śum$_6$* / Immediately after Enlil had given kingship to him (Rīmuš).

addressing Umma/KI.AN, all of which preceded Rīmuš's conflict with Kazallu upon his return journey north (1993). According to one inscription, by his third regnal year Rīmuš had already killed or conquered 31,226 men in the eastern lands of Elam, Marḫaši/Paraḫšum and Zaḫara.[33] A summary account in one of Rīmuš's royal inscriptions combines his three distinct campaigns against 1) Adab and Zabala, 2) Umma and KI.AN and 3) Lagaš and Ur as victories in Sumer. In this account the scribe records the 66,043 men affected by Rīmuš's campaigns. The numbers from these military accounts impress upon the reader the serious casualties suffered in both the south and east at the hand of Rīmuš.[34]

	Killed	**Captured**	**Displaced**
Adab + Zabala	15,718	14,576	[4,220]
Umma + KI.AN	4,100	4,140	3,600
Lagaš + Ur	7,804	5,460	5,985
3 campaigns in Sumer	28,062	24,176	13,805
Kazallu	12,651	5,862	…
Elam + Marḫaši	16,210	15,016	…
Total:	*56,923*	*45,054*	*13,805*

Table 2: Campaigns of Rīmuš

Throughout his royal inscriptions, Rīmuš venerates Enlil at Nippur, keeping with southern Sumerian tradition.[35] In fact, Rīmuš dedicated vessels to various local deities: Suen at Ur (RIME 2.1.2.13) and Tutub (RIME 2.1.2.15), Šamaš at Sippar (RIME 2.1.2.14) and an unknown deity at Tell Brak (RIME 2.1.2.16). This appears as a continuation of his father's practice of paying homage to Dagān in Tuttul.[36]

[33] RIME 2.1.2.6, ll. 68-73.

[34] The figures presented in the table follow W. Sommerfeld's impressive disentangling of the mixed-decimal system of the Akkadians and incognizant Old Babylonian scribal errors (2008). Contrariwise, F. Pomponio adopts a generally incredulous view of such large casualties in light of Ibbi-Zikir's claim to have slaughtered 20,309 men from only two cities (TM.75.G.1698) (2011). He maintains skepticism of such large numbers.

[35] RIME 2.1.2.10, 11, 12.

[36] RIME 2.1.1.11, ll 17-23: (Akkadian version) šar-ru-gi lugal *in* tu-tu-li^{ki} *a-na* ^{d}da-gan *uś$_2$-ka$_3$-en ik-ru-ub* / Šarru-kēn, the king, bowed down before Dagān and prayed in Tutul.

Rīmuš's end is unclear but an Old Babylonian omen claims that Rīmuš was slain by his servants by means of their seals, an omen that is also attached to Maništūšu and Šar-kali-šarrī.[37] The literal interpretation is baffling, leaving modern researchers grappling with the intended imagery. Moreover, the historical validity of such omens is questionable given the paradigmatic use of the Akkadian kings (Starr 1986: 630-631).[38] Conversely, the idea of fratricide is popular only by means of circumstantial evidence.

1.1.1.3. Maništūšu: *tiāmtam šapiltam ībir*[39]

As brother and successor to Rīmuš, Maništūšu inherited conflicts in the periphery. His "Standard Inscription" details his conquest of the eastern lands of Anšan and Širiḫum as well as the undefined 32 cities from across the Lower Sea, associated with modern-day Oman.[40] However, there is little archeological evidence to substantiate Maništūšu's claims of hegemony;[41] the archeological evidence does support extant trade connections between the Gulf region and Mesopotamia (Michalowski 1993: 73-75; Potts 1990: 138).

The focal point for many historians working within Maništūšu's reign is the so-called Maništūšu Obelisk, a formidable diorite inscription recording the "sale" of local lands to the king. The exact interpretation of the transactions outlined in this monument is not universally agreed upon.[42] Regardless of the precise interpretation, it does seem that the land being acquired was from the northern zone of the alluvium near the Euphrates (Kiš, Marad, Giritab and Dūr-Suen) and that the prices were fixed at a reasonable rate (Steinkeller 1987-1990: 335).

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[37] YOS 10, 42 i 5: [*a-mu-ut*] *ri-mu-uš ša wa-ar-du-šu i-na ku-nu-*[*k*]*a-ti-šu-nu i-du-ku-*[*š*]*u* / Omen of Rīmuš who his servants slew with their seals.
[38] For amusing explanatory scenarios for "death by cylinder seal" see W. Hallo (1991: 155-156).
[39] "He crossed the lower sea."
[40] RIME 2.1.3.1.
[41] Included in this is the debate over Maništūšu's temple building activity at Nineveh, which remains an unresolved issue ([J. G.] Westenholz 2004; Reade 2011).
[42] Were these lands fairly purchased or forcibly acquired under duress? (Steinkeller 1993: 335; Postgate 1994: 41).

A Neo-Babylonian forgery, dubbed the Cruciform Monument, elaborates on Maništūšu's benefices to the E-babbar in Sippar during his reign (Sollberger 1968; Goetze 1947: 347, fn. 1; Gelb 1949); despite the fraudulent authorship and context of this inscription, P. Steinkeller argues that it was in fact based upon authentic Maništūšu inscriptions and does possess significant historical insight into Maništūšu's civil policies (1978-1990: 335).[43] His attention to religious obligations is also evidenced in his dedicatory objects to Enlil in Nippur, Bēlat-Aya in Sippar and Nin-Isina in Isin.[44] In an alternative explanation, M. A. Powell reconstructs Narām-Suen in the broken opening of the text, suggesting this was an elaborate piece of propaganda aimed at Nabonidus by urban elites (1991). This stylized propaganda was instigated by the Šamaš priests in Sippar to compel their king to restore the dilapidated temple. For various reasons, Powell believes the Cruciform Monument was fabricated *in toto*, with no Sargonic parent text (1991: 27).[45]

Given the paucity of texts from the reign of Maništūšu, it is difficult to elaborate on his role in the growth and development of the Akkadian empire. From the limited material available it appears that the qualities of Maništūšu's reign are generally continuations of the preceding practices of imperial expansion; however, there is at least one indication that he was moving towards a new royal koiné by constructing an official form of royal art in a new sculpture style (Amiet 1976: 126-127).

1.1.2. Classical Kings

The major internal division within the Old Akkadian period is guided by a series of changes to the paleography and metrology. These developments occur throughout the reign of

[43] Compare with BE 1, 13 a text that records Rīmuš's appointments to the same E-babbar.
[44] RIME 2.1.3.3, 4, 5.
[45] Compare the *Donatio Kurigalzu* of Eanna of Uruk in M. A. Powell (1982) and the Sun Tablet of Nabû-apla-iddina.

Narām-Suen and continue under Šar-kali-šarrī. It is difficult to ascertain the exact moment when specific standardizations were implemented under Narām-Suen's administrators. Regardless, towards the end of Narām-Suen's tenure as King of Akkade, a widespread standardization is in place making the script relatively uniform throughout Mesopotamia. The additional practices of systematizing dating notation, metrology, and perhaps even establishing royal administrative centers, bespeak a necessity on the part of the Akkadian bureaucracy to grapple with integrating a wide variety of local practices into one functioning and universally comprehensible system. This amalgamation of changes is referred to in modern parlance as the Reforms of Narām-Suen, which, at present, demarcate the Pre-Classical from the Classical period.

1.1.2.1. Narām-Suen: *il Akkade*[46]

Tradition avers that Narām-Suen was the son of Maništūšu, despite later recensions purporting Narām-Suen to be the son of Šarru-kēn.[47] Due to Narām-Suen's long reign and general success, he earned a perennial place in Mesopotamian cultural lore. The ideologies that influenced later reminiscences of Narām-Suen are not a central concern here;[48] rather, reliance on the contemporaneous textual data reveals interesting aspects of his person and reign.

Narām-Suen's royal inscriptions, particularly those capturing the events of the Great Rebellion, indicate that Narām-Suen's reign began to move beyond the initial phase of imperial conquest (although expansion was certainly still practiced by Narām-Suen) and ventured into

[46] "God of Akkade."

[47] See the Late Babylonian *The Chronicle of Ancient Kings* and a chronicle from the reign of Nabonidus from the 3rd c. BCE. A certain level of confusion is not surprising given the two millennia that had elapsed between the historical figures and these specific legends.

[48] Later myth lacks the encomia laden upon his grandfather, Šarru-kēn. Despite Narām-Suen's rapacious reputation, a large corpus of fabular tales recounts his life and times. From the Old Babylonian period we have "Narām-Suen and the Lord of Apišal," "Erra and Narām-Suen," "Elegy on the Death of Narām-Suen," "Narām-Suen and the Enemy Hordes," as well as copies of the "Great Revolt" and most famously the *Curse of Akkade*. Second millennium sources include recensions of "Narām-Suen and the Enemy Hordes" from the Middle Hittite Kingdom ([J.G.] Westenholz 1997).

methods of imperial consolidation and integration. The various mechanisms employed by Narām-Suen have been aggregated into one discrete category referred to as the Reforms of Narām-Suen. It is precisely these administrative reforms that herald the emergence of a new imperial phase, defined by its disruptive policies towards local institutions.

1.1.2.1.1. The Reforms of Narām-Suen

Given the chronological and ideological importance placed on these reforms, it is crucial to elaborate on the constituents of this stage of imperial domination. The exact chronology of the individual reforms is not known—only the vague description that at some point in his reign these characteristics appear in the texts and glyptic.[49]

Figure 4: Paleography of the ŠU sign

Perhaps the most oft-cited feature for defining the Classical Akkadian period is the change and subsequent standardization of the script. This feature is often attributed to the heavy centralization expressed in the imperial structure of the Akkadian administration. To this is also tied the standardized orthography of the period. The sign forms under the few documents securely dated to Šarru-kēn are indistinguishable from earlier ED IIIb forms.[50] At some point beginning under Rīmuš, and continuing under Maništūšu and Narām-Suen, certain sign forms underwent slight modification; I. J. Gelb identified a rudimentary method of identifying Old Akkadian writing in the rotation of the "thumb" wedge in the ŠU, DA and ID signs (1952: 5).[51] However, as A. Westenholz has

[49] This was not the first attempt at standardization; already by the reign of Šarru-kēn year names are implemented through Mesopotamia (Frayne 1993: 8).
[50] The major archives associated with these Pre-Classical rulers are Nippur V, Umma Archive A and the Meskigalla archive from Adab (Foster 1982e: 5; Visicato and Westenholz 2010).
[51] Several scholars have added paleographic markers to this basic list: Foster (1982b: 3-4); Foster (1985: 24-25); Yang (1989: 39); Westenholz (1999); Maiocchi (2009); Foster (2011: 131).

indicated in the Nippur texts, archaisms are still found in Classical Akkadian texts (1975: 3-4). Particularly pertinent for understanding palaeographic reforms is MAD 5, 68 where a scribe from umm el-Jir begins in the Classical style, but devolves into more archaic forms (Foster 1983a: 173).[52] This overlap accords well with the gradual pace of shifts in paleography; older scribes would probably continue earlier styles while the newly trained scribes would contemporaneously write in the newer forms.

Figure 4 gives the standard approximation of the gradual rotation and loss of the "thumb" wedge for the ŠU sign. However, even this transition is not completely systematic; the ED IIIa form persists into Early Sargonic, and the Pre-Classical form from ED IIIb appears only in texts from Lagaš and Ur.[53] The Classical Sargonic form, however, is generally universal across Mesopotamia during the reigns of Narām-Suen and Šar-kali-šarrī.

Other important chronological features in the writing system are orthographic conventions.[54] A. Alberti has addressed the chronological development of the ligatured version of |ŠU+LAGAB|, where Pre-Classical texts maintain two disjointed signs and only the Classical texts amalgamate the separate signs into an inseparable compound, although there appears to be local variation unaccounted for in his paradigm (1987). The most standardized feature of the orthography is the comparatively systematic use of the various grammatical forms of the third masculine singular pronoun (Sommerfeld 2010: 151).

[52] A similar caveat was voiced by Z. Yang, who demonstrated handwriting variations on the same tablet in the Adab corpus (1989: 39). Yang concluded that tablets from the central archive tended to possess more standardized paleography.
[53] (Westenholz, personal communication, April 30 2013).
[54] The work by I. J. Gelb, P. Steinkeller and R. Whiting enumerates several additional Akkadianisms (predominantly lexical) in third millennium *kudurrus*; however, these linguistic markers are only useful for determining the underlying language of the text and not when it was written (1991: 11-12).

Cuneiform Sign	Grammatical Function
SU	syllabic /su/ and genitive pronominal suffix
SU_4	independent personal pronoun and accusative pronominal suffix
ŠU	anaphoric pronoun

Table 3: The Grammatical Distribution of /šu/

Naturally, the appearance of the gur *Akkade* indicates a post-Reform date.

Part of this revision of the paleography is a general reworking of the tablet form and shape. Tablets from the Classical period no longer have the pillowy, rounded silhouette; they are now rectangular with sharper edges (Westenholz 1975: 3-4; Foster 1982e: 3; Maiocchi 2009: 5-6). The large, multi-column texts popular in the ED IIIb period are generally replaced during this same transition by smaller, single-column texts. This shift in tablet shape coupled with specific changes in the paleography indicate a rotation in the writing orientation in the administrative texts. Figure 5 outlines a typical rectangular, single-column text from this period, which measures 10.5 cm. While this span could fit within the human hand, it fits more easily and comfortably with the hand wrapped around the shorter side of the tablet. Additionally, the loss of the upward wedge in the ŠU, DA and ID signs, which could more easily be executed when writing vertically, perhaps shows an adjustment to the rotation of the writing direction in these smaller texts.[55] In light of these

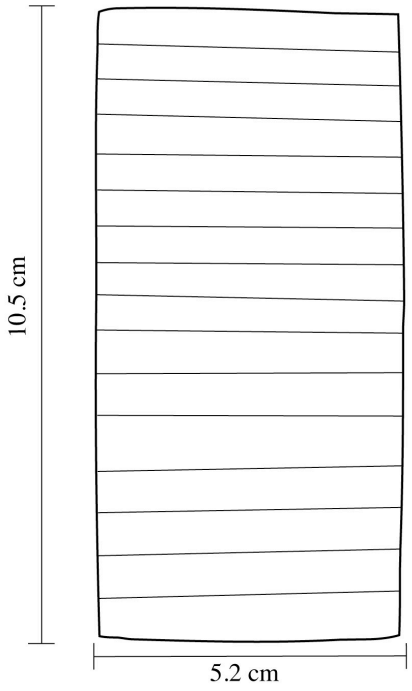

Figure 5: Dimensions of the new Old Akkadian Tablet Layout (MCS 9, 237)

[55] B. Studevent-Hickman argues that the initial visual/memory aid wedge preceding lexical list entries guides the dating of the widespread rotation of the script (2007:495-496).

observations, it is possible that the underlying change was the rotation of the cuneiform writing with the developments in tablet form and script being biproducts of this broader innovation.[56]

The language of the documents in the Old Akkadian period reflects the language of the kings—that is their specific dialect of Akkadian (Sommerfeld 2003a: 585).[57] Earlier forms of Akkadian are detectable in the Early Dynastic texts from both the southern and northern regions of Mesopotamia; however, as W. Sommerfeld demonstrates, the evidence does not depict a unified Akkadian language (2010: 158). In fact, we would expect a diversity of dialects and registers in a natural language environment.

One of the popular reasons for claiming that Akkadian became *the* official language was the prevalence of Semitic names in elite offices in the south. However, given the inconclusive relationship of the language of a personal name with an individual's ethnic identity, I prefer here to label Akkadian as *an* official language, not to the exclusion of Sumerian. Administrative records are recorded in both Sumerian and Akkadian during this period. There is some evidence to suggest that this was partly regional. Over half of the texts from the local royal administrative centers were rendered in Akkadian, a contrast with archives from the long-established Sumerian cities of the south (1999: 50).

Given the plethora of administrative texts, changes in the metrology systems are readily detectable. Texts attributed to Narām-Suen demonstrate widespread standardization.[58] For the first time dry and liquid capacity systems coalesce and a constant relationship between volume

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[56] A. Falkenstein, M. Green and H. Nissen argue that the rotation of the writing occurred much earlier, during the Uruk III period (Gelb, Steinkeller and Whiting 1991: 8). However, stone monuments continue the older, vertical orientation through the Akkadian period into the Old Babylonian period. As Studevent-Hickman has indicated, this rotation of the cuneiform writing system was gradual, beginning in the Fara Period and culminating under the Classical kings of Akkade (2007: 494-499; Powell 1981: 431).

[57] There are, of course, differences between genres of texts. The language of literature tends to be more archaic, particularly in the phonology, than non-literary sources (Hasselbach 2005: 230).

[58] B. Foster argues that this imperial metrology did not wholly replace the local standards; he argues that the internal records not related to imperial matters were reckoned in the local metrology (1986a: 50).

and capacity is established (Powell 1975: 185). The ration system undergoes widespread modification (Gelb 1965). Most notable is the establishment of the 300-$sila_3$ gur (300 liter capacity unit), which became the standard gur for subsequent periods in Mesopotamian history (Powell 1975: 185). The menology system has not received the same scholarly attention as the capacity system, resulting in an opaque understanding of the calendric system in the Old Akkadian period. The use of Semitic month names becomes slightly more prevalent, but the patterns and motivations for such preferences have yet to be investigated.[59]

The establishment of administrative centers in the south, outside the major urban centers and directly under the control of the king, is attributed to the Classical kings based on internal information from the texts, particularly paleography and prosopography.[60] In southern Sumer four such centers are known: the Mesaĝ archive at Sagub, located between Umma and Lagaš (Bridges 1981); umm el-Ḥafriyat 15 km east of Nippur (Biggs 1989: 33; Steinkeller and Postgate 1992: 8-10);[61] the "Semitic Quarter" in Adab (Yang 1988: 8); and the archive of Lugalra in Lagaš (Kienast and Volk 1995: 88).[62] Unfortunately, only two of these sites have been excavated (Adab and umm el-Ḥafriyat), so the context of such archives is unevenly preserved.

[59] M. Maiocchi and G. Visicato have suggested that the calendar reforms were introduced late in the Classical period, after the other Reforms of Narām-Suen (2012: 18). However, this is just one of several possible interpretations of the data, as they concede.

[60] E. Salgues has recently argued, quite convincingly, that the year names of the Mesaĝ archive are abbreviated forms of known year names for Narām-Suen (2011). This inspires confidence in the current dating schema for Classical and Pre-Classical Sargonic texts. While the internal chronology of the Akkadian period may be refined in time, the general placement of these types of changes are certainly the work of Narām-Suen. The presence of these year names also demonstrates that Narām-Suen had already conquered Subartu and Armanum prior to this archive. Granted, the institution at Sagub may have been in place for many years prior with unrecovered or destroyed previous archives.

[61] The remaining ca. 200 unpublished texts from this archive are forthcoming by A. Westenholz and L. Milano from the Schøyen and Cornell Collections.

[62] A. Westenholz is currently preparing a new edition of the Lugalra archive forthcoming in CUSAS.

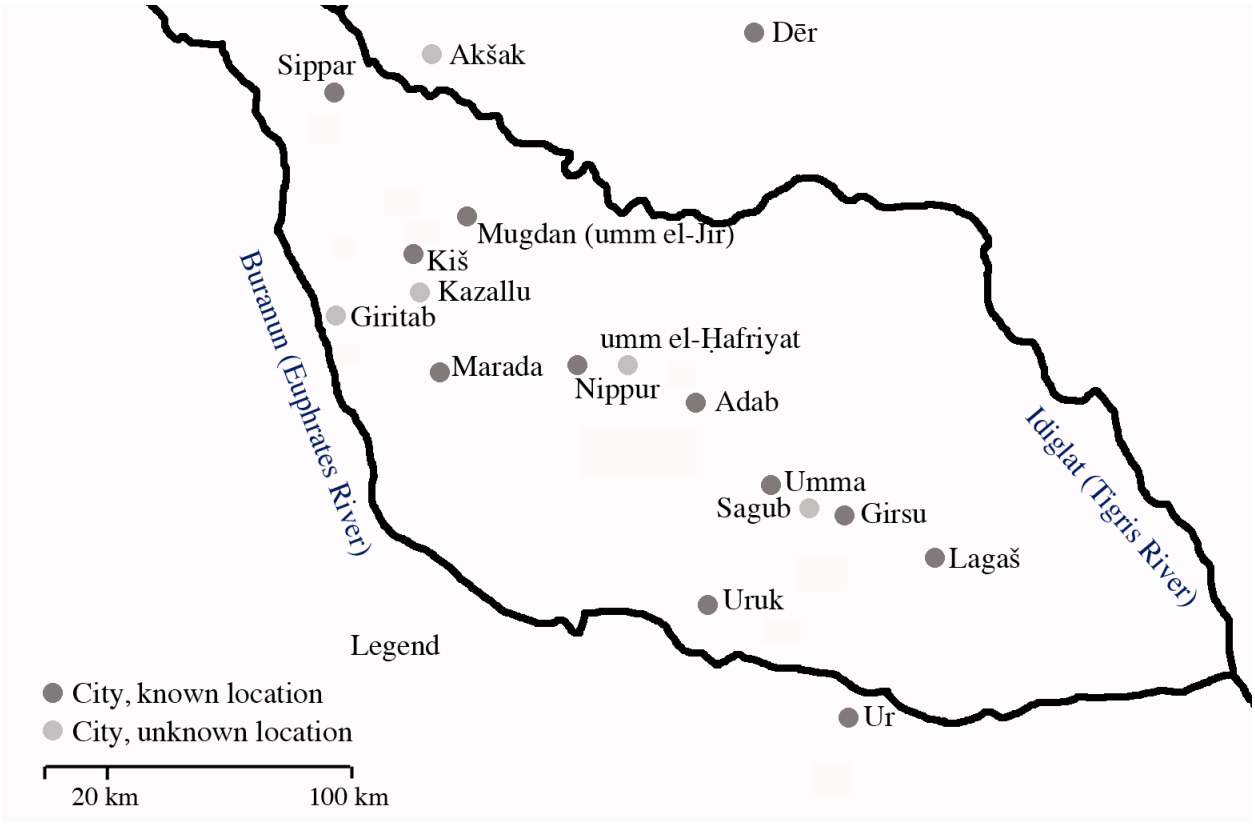

Figure 6: Map of Mesopotamia (close-up)

Naturally, changes under the Akkadian kings permeated across the entire culture as part of a natural development in Mesopotamian society. Narām-Suen introduced new royal titulary in his title *šar kibrātim arbā'im* in response to the revolt of the "four corners of the world." Also connected with the Great Rebellion was his apotheosis, which history would remember as both heterodoxic and emulous.[63] Contrary to preceding practices, Narām-Suen began promoting his

[63] The history of the practice of divinizing kings is obscure. From ED I Ur appears ilšu-mālik (UET 2, 308), also attested at ED IIIa Abū-Ṣalābīḫ (ilšu-mālik, OIP 99, 513) (see additional examples gathered by W. Sommerfeld [2010: 136]). The personal names irām-^{d}mālik (AIHA 4, 8 rev. 6, and the Maništūšu Obelisk), puzur-^{d}mālik (DPA 46 rev. 5 and Ist Adab 208 [unpublished]), šum-^{d}mālik (RTC 163 sealing col. ii 1), šū-^{d}mālik (Tutub 33 obv. 9), ^{d}mālik-zinsu (Maništūšu Obelisk), and ire-^{d}mālik (Maništūšu Obelisk) demonstrate the growing popularity of this naming tradition during the Old Akkadian period. However, whether *mālik* here denotes the East Semitic "councilman" or West Semitic "king" is unclear. The potential parallels for the use of dingir-en at Ebla may indicate that a divinized mālik denoted the deified deceased king (Archi 1988). There is entirely insufficient evidence to concretely link the practice of ancestor king worship at Ebla with the culture of the Akkadian kings, but it is merely put forth as a potential hypothesis. Note also at Ebla the attestation of ^{d}BAD-la-tum (^{d}*bēlatum*) and ^{d}BAD GN (^{d}*bēl* GN) (Steinkeller 2004: 13-14).

goddess Ištar-Annunītum to the detriment of Enlil, the perennial patron of kings. Several of these innovative reforms persisted only as long as the empire, fading out of use and practice while the administrative reforms endured through many succeeding periods of Mesopotamian history.

The exact point at which Narām-Suen implemented his reforms to the preceding administrative system is vague and susceptible to circular logic; based on only a few dated administrative texts from his reign we can reconstruct that the palaeographic changes were already in place before his defeat of Uruk and Nagsu, Simurrum and Arame as well as his construction projects for Enlil's temple at Nippur and Ištar's in Zabalam.[64] While the building program at Nippur and Zabalam likely occurred late in Narām-Suen's reign, since his immediate successor had to conclude these works, the timing of the Great Rebellion is less transparent (Jacobsen 1978/79; Westenholz 1999: 52).[65] A. Westenholz demonstrates that this major event occurred later in Narām-Suen's reign based on three inscriptions from Marada that indicate his son, the governor of Marada, built a temple for Narām-Suen there when he fought his "nine campaigns in one year" (2000: 553).

Note also that in Šarru-kēn's Victory Stele of Ištar that the king is holding the net in constrast to the deity Ningirsu who holds the captives in his net in the Early Dynastic Stele of Vultures (Nigro 1998).
P. Steinkeller makes the suggestion that Narām-Suen's apotheosis was, in part, motivated by the southern Mesopotamian paradigm of ultimate divine ownership of a polity's arable land (1999b: 554).
G. Selz advocates the divinization of Early Dynastic kings through the claims on divine parentage (2008).
W. Farber raises pertinent questions surrounding the context of the Bassetki Statue, especially its isolated location and unique status (1983: 72).
I. Winter suggests the coalescence of royal and divine began already under Rīmuš with the placement of the purportedly life-size royal figures inside the temples, the sacred divine space of the deity (1992: 32).
M. Liverani demonstrates that the position and placement of Šarru-kēn in his Stele of Ištar (Louvre Sb 2/6053) already shows a merging of visual cues between the figure of the king and the deity (1966: 24).

[64] RTC 86, 99, 136; Tutub 50 and 65. Narām-Suen's conquests of Simurrum and Arame were not part of the Great Rebellion, but whether these battles occurred before or after the general rebellion in southern Sumer is unknown (RIME 2.1.4.32).

[65] Using the divine determinative in Narām-Suen's name as a chronological indicator has resulted in uneven and confusing results and therefore cannot be taken as a reliable marker for pre- or post-rebellion (Westenholz 2000: 553, fn. 19). Other examples of inconsistent application of the divine determinative are outlined by P. Michalowski (2008: 35, fn. 5 and 39-40).

The lack of detail regarding the death of Narām-Suen suggests that his passing was unremarkable. He likely died of old age after decades of conflict and prosperity. He was followed on the throne by his son, Šar-kali-šarrī.

1.1.2.2. Šar-kali-šarrī: *bāni bēt Enlil*[66]

Already in texts from Narām-Suen's reign there is mention of his son, Šar-kali-šarrī, positioned in Nippur (e.g. OSP 2, 16). His exact function and responsibilities are unknown, but given the sacred nature of the city, he was likely learning the statecraft of empire. As mentioned above, Šar-kali-šarrī continued the building programs initiated by Narām-Suen in Nippur. This building program determined many of the preserved year names from Šar-kali-šarrī's reign.

Upon ascension to the throne, Šar-kali-šarrī with his royal entourage commenced a tour through Sumer, including the major centers of Girsu, Adab, Isin, Nippur, Zabalam and Umma (Foster 1980: 36-42; Postgate and Steinkeller 1992: 56; Westenholz 2009: 64). The regularity and purpose of such a practice can only be speculated upon at present. Perhaps Šar-kali-šarrī felt compelled to reinforce his presence in a faltering realm; or perhaps there were diplomatic motivations for visiting these major centers in southern Sumer.

However, many of the accolades acquired by his predecessor do not attach themselves to Šar-kali-šarrī; the empire was beginning to founder. The king faced confrontations and incursions not only from the recalcitrant south with Puzur-Mama establishing independence at Lagaš, but also from marauding Gutian hordes to the northeast, the Elamites in the east and the Amurru in the west. For the first time we have glimpses into the growing threat of roaming gangs disrupting the economic stability of the countryside.

[66] "Builder of the house of Enlil."

> Thus (says) Iškun-Dagān to Lugalra: Cultivate the field and guard the animals! Also, you should not say, "The Gutians are there! I cannot plow the field!" Every five kilometers install a post so that you plow the field!
> (FAOS 19, Girsu 19)

The hostilities moved closer to the Akkadian center, with one battle being fought "opposite Akšak." Whether Šar-kali-šarrī merely lacked the skill of his predecessors at quelling rebellions or whether the resources and stamina of the empire had been drained by generations of conflict is not apparent. Regardless, the king ruled over a reduced territory, exemplified in his tutelary *il māti Uri* ("God of the land of Uri/Warû"), and subsequent generations' assignment of the fall of Akkade to Narām-Suen in the *Curse of Akkade*, not because Akkadian kings did not persist, but because the might that was Akkade had ceased to exist.

1.1.3. Late Akkadian Kings: *mannum šar mannum la šar*[67]

The end of Šar-kali-šarrī's reign marks the termination of the consanguineous dynasty and the beginning of a period of turmoil. The inherent strains of maintaining an empire allowed the neighboring Gutian hordes an opportunity to overrun the imperial domain.[68] The Gutians, however, lacked the political structure necessary to impose hegemony upon Sumer (Gadd 1966: 43). The southern polities appear to have reverted to their former city-state paradigm, while the power of the feckless kings of Akkade was relegated to the immediate vicinity of their capital.

After this three-year period of chaos some stability returned to Akkade under the reign of Dudu. His dominion was restricted to a small northern zone incorporating Kiš, Apiak and possibly Adab (Westenholz 1999: 57; Frayne 1993: 210-213). His successor, Šū-Durul, continued to rule this small kingdom inclusive of Ešnunna.[69] Whether the empire never fully

[67] "Who was king, who was not king?"
[68] E. A. Speiser, in his classic essay on the collapse of the Akkadian empire, broadened the discussion of the "invading hordes" to include the Elamites, Hurrians and Lullus in an effort to develop a more holistic approach to understanding the enervation of a formerly robust polity (1952).
[69] His name betrays an affinity for the Durul canal (modern Daban canal) situated alongside Ešnunna.

recovered from the Great Rebellion or the opposition under Šar-kali-šarrī was genuinely overwhelming, this concatenation of disaffected polities proved fatal for the Akkadian empire.

Despite the short era delimited by the Akkadian kings, this pioneering model of empire became deeply entrenched in the Mesopotamian psyche; the imperial form and ideology was emulated by the subsequent kings of the Third Dynasty of Ur, and a long line of Assyrian kings in the Middle and Neo-Assyrian periods as it was revised and refined throughout the millennia.

1.2. Old Akkadian Material Culture and Chronology

The association of texts and material culture is inseparable when establishing chronological periods at ancient sites. However, in the absence of texts that may state explicit rulers, events or officials it becomes increasingly difficult to assign pottery, glyptic and objects to a time period with certainty. This is evident in the debates centered on the chronology of the Old Akkadian period, where much of the material culture depicts a smooth transition from ED IIIb styles to subsequent Ur III types.

Despite the obstacles present in this particular period, M. Gibson has devoted significant energy to parsing the internal chronology of the Akkadian period. He divides the period into two major phases based on the material culture: early (Šarru-kēn, Rīmuš, Maništūšu) and late (Narām-Suen, Šar-kali-šarrī) (Gibson and MacMahon 1995: 6).[70] Some of his diagnostic pottery features are jars with either a single ridge at the shoulder or multiple ridges, large bowls both with and without a spout, bag-shaped jars, and bottles with exterior bumps (Gibson 2011: 79-82). While the iconic plano-convex brick does help separate Early Dynastic and Akkadian levels, Gibson has noted its continued use into certain Akkadian levels in limited contexts (Gibson 1982: 533, fn. 22; Gibson and MacMahon 1995: 1). The most abundant dateable material,

[70] This accords well with the bipartite division followed in the written sources: Pre-Classical and Classical Sargonic.

pottery, is problematic for dating historical periods because of its slower rate of change compared to seals or inscriptions (Gibson and MacMahon 1995: 5; Gibson and MacMahon 1997: 9).

In contrast to Gibson's focus on pottery for identifying diagnostic features for delineating the Old Akkadian period from the preceding Early Dynastic culture, D. Matthews prefers to utilize the rapidly changing glyptic styles to date strata to the Old Akkadian period (1997: 2).[71] He believes the Akkadian seal style marks the beginning of the Akkadian period in Mesopotamia (1997: 6). Yet, seal glyptic also poses certain chronological problems given the seals' heirloom status, and occasional re-carving.

M. Gibson and A. MacMahon have tried to establish synchronisms between the Diyala and Nippur pottery sequences for the Old Akkadian period with mixed results (Gibson 1982: 536-537; Gibson and MacMahon 1993, 1997: 12; Matthews 1997: 3; Roaf 2001: 55-66). There are still strong regional variations and preferences between the Diyala and alluvial pottery but Gibson is not able to generalize beyond Nippur to other Mesopotamian alluvial cities. Still, a distinction between a northern and southern ceramic tradition is apparent (Gibson and MacMahon 1995: 16; MacMahon 2006: 59, fn. 82).[72]

1.3. Geography of the Akkadian Empire

Similar to other empires, the Akkadian kings acquired new territories around their centrally located capital. The reach and extent of their empire varied by reign, but at its height it reached lands as far north as the Ḫabur, possibly as far west as Ebla, all the southern lands of

[71] R. M. Boehmer divided the Akkadian period into three phases based on the evolving styles of the seal glyptic: I (Šarru-kēn), II (Rīmuš and Maništūšu) and III (Narām-Suen until Šū-Durul) (1965).
[72] A. MacMahon speculates that the Diyala's proximity or inclusion in Akkad could allow for the material culture of the area to be interpreted as characteristics of Akkadian ethnicity (2006: 59).

Sumer to the Persian Gulf and beyond to Dilmun and Magan, and as far east as Meluḫḫa through the Elamite territories of Marḫaši/Paraḫšum, Zaḫara and Susa.

The royal inscriptions depict a situation where the southern city-states revolted against nearly every Akkadian king. Šarru-kēn's initial conquests included Ur, Uruk, Umma and Lagaš.[73] Rīmuš had to put down uprisings in Adab, Zabalam, Umma, Ur, Lagaš and Kazallu.[74] Narām-Suen faced opposition from nearly all formerly conquered lands, and judging from the inscriptions of Šar-kali-šarrī these rebellions appear to have ultimately succeeded. However, there is one region that is notably absent from the protracted list of rebels: the Diyala. From the collective inscriptions of the Akkadian kings, listing over fifty insurgent lands, the cities of the Diyala are never mentioned.[75]

This contrast is an informative context in which to study the variety of methods employed by an empire to maintain control of their dependent territories. The continuous rebellions in the south would naturally elicit differing practices from those areas acquiescing to peaceful integration into the empire. The mechanisms of control are typically more concentrated in resistant areas. Comparing practices in the Diyala with the other areas of the empire will demonstrate if there were various methods of control employed by imperial administrators, which will offer an improved understanding of how imperial administration operates. Additionally, this comparison will test whether the expectation that politics would overtly affect administration is valid in the case of the Akkadian Empire. This understanding of the imperial control mechanisms can then be incorporated into discussions of preceding or subsequent empires in Mesopotamia.

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[73] From the Old Babylonian copy CBS 13972 + 14545.
[74] RIME 2.1.2.1, 2.1.2.2, 2.1.2.3.
[75] Kiš certainly had a special relationship with the Akkadian kings, so their defection was considered treasonous. A similar situation may also apply to Sippar and Kazallu. Yet the fact remains that these former allies did rebel while the Diyala cities are never recorded as having done so.

1.3.1. The Location of Akkade

There is some evidence to suggest that the Diyala area may have had political significance during the Old Akkadian period (McEwan 1982; Wall-Romana 1990: 205-245; Westenholz 1999: 32; Reade 2002: 269).[76] The Akkadian capital city, Akkade, is still undiscovered, leaving a substantial lacuna in our records. Only texts from subsequent periods allude to the general location of Akkade. An administrative text from the Ur III period (UET 8, 14) lists Akkade on the Tigris as well as among the northern lands of Akšak, Mari and Aššur. Additionally, a royal inscription from Ur-Namma (RIME 3/2.1.1.29), founder of the Ur III dynasty, lists Akkade in conjunction with the lands of Awal, Ešnunna and Tutub. Perhaps most indicative is the Prologue to Codex Hammurapi, where in the list of 27 important cities Akkade is listed between Ešnunna and Aššur. This is paralleled in the geography list MSL XI 60 (ii 60-64) where Akkade is again listed in conjunction with Ešnunna.

A Neo-Assyrian letter offers, perhaps, the best evidence for the location of Akkade. An administrative official, Mār-Ištar, writes to Esarhaddon:

> The substitute king, who on the night of the 14th sat on the throne in Nineveh and spent the night of the 15th in the palace of the king … entered the city of Akkade safely on the night of the 20th…."
> (AOAT 5:1)

It is clear from this description that Akkade sat within five days of Nineveh.[77] The direct distance between Nineveh and Baghdad is approximately 300 km. However, it is not explicit whether this entourage was traveling by boat or road.

[76] This may be tied to its advantageous position along one of the few traversable trade routes from Sumer to the northern and eastern pathways (Rowton 1982: 320).
[77] It is clear from the Neo-Assyrian exemplar of *The Sargon Geography* that the scribes under Sargon II believed the capital to be located south of the Lower Zab River and north of Sippar (see lines 6-32; Grayson 1974/77).

J. Reade was inspired by the discovery of an inscription of Maništūšu excavated from Kharā'ib Ghdairīfe, a site located near the confluence of the Adheim and Tigris rivers (al-Rawi and Black 1993). According to Reade, the area contains several early sites that may potentially fit the description of Akkade (2002: 269). A. Westenholz is also compelled by this evidence and prefers to situate Akkade north of the Diyala and south of Aššur. These small pieces of evidence do not allow Assyriologists to reconstruct a specific location for Akkade, but do indicate that the city was outside of Mesopotamia proper near the Tigris River and the Diyala sites.

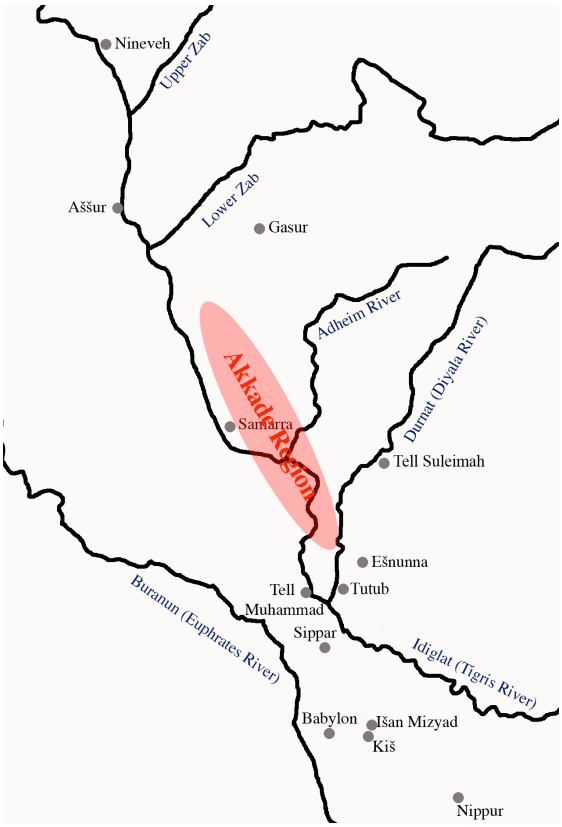

Figure 7: Map of the Akkade Region

Additional supporting evidence for this general location of Akkade was offered by R. Hasselbach in her recent treatment of the Old Akkadian language (2005: 230-233). She argues that the area of the Diyala constitutes a more innovative variety of Akkadian, while southern Mesopotamia demonstrated more conservative forms. Many of the innovative features identified in the Diyala corpus by Hasselbach are also present in the Gasur administrative documents (Markina 2011: 208-209). The interceding area of northern Babylonia (defined in her study by Kiš and umm el-Jir) exhibits an intermediary stage between the two other regions.[78] Both Hasselbach and Westenholz interpret the isogloss distribution as indicating that the Sargonic

[78] This tri-partite division of Mesopotamia was suggested by I. J. Gelb, P. Steinkeller and R. Whiting based on features found in the early *kudurrus* (1991).

dialect derived from the Diyala area, the source of linguistic innovation and likely the capital city as well, and subsequently spread to southern Mesopotamia (Westenholz 1999: 33; Hasselbach 2005: 233).

While the precise location of Akkade remains unknown, its placement along the Tigris River north of the Diyala River and south of the Low Zab seems likely. The proximity of the imperial center to the Diyala sites, under investigation here, offers useful context for interpreting the qualities and characteristics of imperial management (or lack thereof) in comparison with southern Mesopotamia.

1.4. A Brief History of Empire

Relevant here is a discussion on the concept and behaviors of empires in antiquity, particularly my claim that the Akkadian polity was an empire. While Akkad's position as the first empire has little bearing upon the investigation of the methods of control exercised by the central administration over the local institutions they conquered, it certainly has implications for the subsequent interpretation of the evidence within a broader socio-historical context. Below is an overview of the definitions and categories of empire and their application to the Akkadian empire.

1.4.1. Polysemous Empire

A universal and concise definition of "empire" has plagued and eluded scholars, especially in recent scholarship where the polities included under the umbrella of "empire" are ever-expanding. The four "classic" imperial states that have largely informed our views of ancient empire are the examples of Alexander the Great, the Achaemenid Empire, the Roman

Empire and Imperial China.[79] Unsurprisingly, the majority of scholarship in Western tradition has focused on the preeminent Western empire of Rome.

Under the Roman Republic there were two modes of *imperium*: *imperium domi* of the civic realm with specific limitations, and *imperium militiae*, a form of absolute authority for a magistrate on a battlefield. Through this second use, *imperator* came to denote a "general" or otherwise ultimate military leader (Morley 2010: 17). Therefore, this title was bestowed upon victorious military leaders, such as Cicero after his victory at Mount Amanus (McFayden 1920: 3). This title denoting *imperium militiae* could never be carried into the city of Rome; upon entering Rome the victor exchanged his *imperium militiae* for *imperium domi*.

Through the bestowal of the title *imperator* upon Augustus in 27 CE, the entity of Rome becomes *imperium* by derivation. But what process creates an *imperator*? Under Augustus begins a process of title accumulation and consolidation. As part of his accretion to the status of emperor, Augustus aggregates military, political and religious titles within one personage. This creates an office of *imperator* instead of its previous role as a title. As part of an office the title is now borne for life and can be carried in the capital of Rome now as its protector and not its conqueror (1920: 6).

In this tradition, formulations of empire in the 19th century stipulated that the personal sovereignty of a particularly powerful ruler, who held dominion over multiple territories, was the central identifier of an empire.[80] However, as N. Morley indicates, this process required only

[79] The partitioning of ancient from modern empires is necessitated by their distinct underlying mechanisms. Ancient empires were motivated by territorial conquest in an effort to accumulate more goods, while modern empires, operating in a capitalist economy, territorially expand only in search of new markets (Ferguson 2008: 276).

[80] Only after the concept of "nation" developed did our modern notion of "empire" mature further. Within the paradigm of a nation the concept of national borders took root; it was the expansion of these national borders by an expansive state in an effort to acquire dependencies that came to identify and define "empire."

partial comparisons with mighty Rome, suppressing common features that did not suit the political climate and emphasizing other shared qualities that promoted the contemporary ideology (2010: 3). In other words, these derivative definitions were wholly subjective, largely influenced by the current political atmosphere.

Even within this modern description of empire there are various schools of thought; many of the economic theories are intrinsically bound to the concept of capitalism, while the more socially-oriented interpretations focus on the asymmetrical power relations in a global context and the agency of the peripheral territories.[81] Unfortunately, many of these concepts, particularly the economic ones, in the traditional literature of empire address only modern articulations of empire yielding uneven applicability to ancient polities.

Yet, even within a definition of empire, scholars parse the category into types, which allows for the inclusion of a broader range of polities. Beginning in the 1950's, researchers began to articulate notions of "informal" imperialism, which sought to identify less coercive influences that lacked the explicit force of the state (Mommsen 1980: 87-90). Building upon this conceptual framework, others have suggested distinguishing between the more centralized bureaucratic empires and the more amorphous patrimonial empires, or territorial versus hegemonic states, or further still integrated empires and "empires of domination" (Sinopoli 1994: 160; 1995: 6; Rowton 1982: 318). More recently the idea of "mini-empires" has crept into the academic discussion blurring the threshold between large, supra-regional states and nascent empires (Smith and Montiel 2001: 263, 296). The concept of "tributary" empires was recently articulated as those empires that conquered "wide agrarian domains and [taxed] peasant surplus

[81] For an excellent overview of the development of modern ideas of empire, see Mommsen (1977).

production" (Bang and Bayly 2011: 6). With these nuances and shades to empire, the definition is no longer a monolithic certainty, but appears more as a continuum (Ferguson 2008: 276).

In an effort to deconstruct current attempts to categorize and delineate empires from non-empires, Y. Ferguson has outlined four distinct approaches to defining empire (2008). While his work centers on modern instantiations of imperial entities, his critique is appropriate to the discussion of ancient empires as well. He outlines an ideal type approach, which are often self-defined empires; this ideal type generally accepts, uncritically, the "classic" examples as the basis for comparison. His "essence" of empire approach is a form of the ideal type, in the Weberian sense.[82] Ferguson's constructivist approach is currently enjoying popularity; this approach derives the definition from observed parameters of a set of exemplars. The final approach is seeped in the current social context; his normative/pejorative approach simply identifies those examples of labeling an entity empire for the purposes of either exhorting or excoriating.

The ideal type approach has operated for centuries with other European nations beholden to the Roman example. More recent comparative work has appealed to the constructivist approach, attempting to parse specific universal features, which has forced a reappraisal of core concepts and definitions (Morrison 2001).[83] New theories include both maximalist and minimalist approaches. The maximalist interpretation requires empires to have expansionist tendencies, possess a large territory that encompasses several distinct eco-zones, and maintain a sizeable population, a central administration, and a standing army (Schreiber 2001: 71). The

[82] "An ideal type is formed by the one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent concrete individual phenomena, which are arranged according to those one-sidedly emphasized viewpoints into a unified analytical construct" (Shils and Finch [trans.] 1949: 90).

[83] The normative/pejorative approach is constantly undergirding all other approaches, often shading the presentation of the definition. This paradigm foregrounds our modern biases that are read back into ancient sources.

more minimalist tendencies derive from the still relevant definition given by M. Doyle, "empire…is a relationship, formal or informal, in which one state controls the effective political sovereignty of another political society" (1986: 45). Current minimal conceptions extend Doyle's definition to include territorial expansion. The result is that empires are "territorially expansive and incorporative kinds of states, involving relationships in which one state exercises control over other sociopolitical entities" (Sinopoli 1994: 160; 1995: 5).[84]

These minimalist definitions reduce "empire" from a list of features to a set of behaviors.[85] Other types of behaviors attributed to empires include siphoning resources from peripheral, conquered or subject territories to the imperial capital, rapid growth (compared to normal state formation processes) or unifying consolidation of subjugated areas (Parker 2003: 525). Yet, despite the careful isolation of probable behaviors based on comparative analyses, these features of empire are entirely subjective. How much expansion is "expansive"? How do we measure internal diversity with partial or anachronistic evidence? How rapid is "rapid" in a growth cycle? Are environmental obstacles factored into expected growth rates? How do we calibrate for resistance when measuring consolidation or unification? These questions, and many others, highlight the inherent problems with the constructivist definition.

So, with Ferguson's four extant approaches ("classical", "essence", constructivist and normative/pejorative) exposed with their inherent subjectivity, where do we go from here? Clearly, a new approach needs to be developed that accounts for the current obstacles in objectively defining the entity of empire.

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[84] The precise manifestation of specific practices are influenced by several factors, including a polity's distance from the defined center of the empire, the pre-existing political conditions, the extent and nature of resistance to the empire, and ecological factors as well as the distribution of key resources (Sinopoli 1994: 160-161).

[85] This approach is similar to P. F. Bang and C. A. Bayly's "diachronic typological mode" that analyzes empires outside of their historical context in an effort to compare empires throughout human history (2011: 10).

1.4.2. Models of Empire

Several pioneering scholars have coupled their discussions of definition and categorization of empire with innovative models, which serve as a simplified, explanatory tool for uncovering a potential explanation for observed behavior. Overall, their interpretive power is more robust than mere definitions, even those that aim to capture behaviors. Many of these models draw from other disciplines, such as sociology or economics.

M. Mann offered one of the earliest models for understanding empire in terms of social power. Undergirding his model is the conception of society as "multiple overlapping and intersecting sociospatial networks of power," which challenges the traditional interpretation of society as unitary, bounded or complete (1986: 1). Mann embraces a "messier" reality in society.[86] He prefers to discard the entrenched terminology of "dimensions" or "levels," which are parts of a larger coherent whole, in favor of an organizational approach, which emphasizes control, logistics and communication.

His second fundament is that the interrelation of distinct social powers is the best method to account for society's structures and histories. Mann identifies four such sources of social power: ideological, economic, military and political (1986: 2). Each type of social power is viewed as an organization unto itself, with its own means of accomplishing human goals. The focus of Mann's analysis is the overlapping network of these distinct sources of social power. The sources of social power themselves are ideal types and his model outlines a linear development from less powerful societies in antiquity to more powerful societies in modernity (1986: 30-31). He assumes Great Britain to be the culmination of successful power structures and modern Western civilization to be "the most powerful human society" (1986: 31). The

[86] This view hampers the comparative approach, which requires clear, isolated exemplars for comparison.

Western-centricism of his model is pervasive, leaving it only partially informed and susceptible to Ferguson's normative/pejorative critique.

Several scholars have adopted a continuum model to account for the fluctuating nature of historically specific socio-political practices in order to avoid the subjective thresholds inherent in traditional definitions. The dichotomous paradigm of earlier models, such as I. Wallerstein's Core-Periphery or M. Doyle's Metrocentric-Pericentric models, is rejected through the implementation of a gradated continuum. Popular within Aztec imperial studies, although originally applied to the Roman Empire, is the Territorial-Hegemonic model, which explains the variety of relationships between the Aztec core and their conquered surroundings (D'Altroy 1992). This model presents a continuum from direct and invasive imperial control over local institutions (territorial) to relaxed intervention over local autonomy (hegemony). However, subsequent research has demonstrated that this is perhaps too simplistic; the imperial capital creates individual relationships with each territory resulting in a "mosaic" of imperial relationships (Schreiber 1992; Parker 2003).

Building upon the criteria of internal diversity within an empire, I. Morris develops an Ethnicity Model for identifying where on the continuum from state to empire a polity is located.[87] His research focuses on the controversial assessment of the fifth-century Athenian

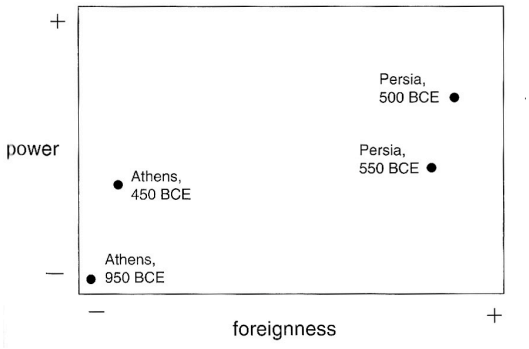

Figure 8: Graph of "Foreignness" (from Morris 2009: 131, Fig. 4.4)

[87] The general continuum from independent states to heterogeneous empire is adopted by Ferguson in response to his critique of existing approaches to defining empire. However, he does not offer any details or identification, leaving the theory somewhat incomplete (2008: 276).

state as an empire. He argues that there was insufficient "foreignness"[88] between the rulers and the ruled in comparison to other ancient empires (2009: 132-133). Figure 8 illustrates Morris' schematic where the x-axis measures a continuum from state to empire, with "foreignness" being the only measure, and the y-axis represents military force, revenue and organizational capacity (2009: 130). Implicit in his model is the connection between diversity and empire; apart from being an entirely subjective measure, often the ancient sources do not record reflections on identity from all strata of society, leaving only a partial picture. Therefore, it is dangerous to build a model entirely predicated upon incomplete source material; there must be some correction for this natural lacuna in the sources.

Following the belief that all current definitions are entirely too subjective, A. J. Motyl has proposed a structural definition of empire (1999: 117).[89] He describes empires as systems that have distinct parts, but coherently assemble to create a whole. While he assigns various behaviors to this model, it is the structure of the model that offers a truly heuristic tool.

He defines "empire" as follows:

> …a hierarchically organized political system with a hublike structure—a rimless wheel—within which a core elite and state dominate peripheral elites and societies by serving as intermediaries for their significant interactions and by channeling resource flows from the periphery to the core and back to the periphery. (2001: 4)

This definition recasts "empire" as a product of its effect on subject polities. This view of "empire" as a structurally isomorphic entity evades many of the problems in measures of degrees of influence or presence embedded in the essentialists' definitions and many of the constructivist

[88] He defines ethnicity (and by extension the parameters of foreignness) as a "discursively constituted identity built around putative descent form a common ancestor" (2009: 133).
[89] A. J. Motyl believes the problem of defining "empire" is compounded by three related issues, namely the changing definition of empire over time (including the conflation between "empire" and "imperial"), the variety and multi-dimensional nature of empires and the varying control an imperial entity has over distinct target polities (Ferguson 2008: 274).

definitions. However, Motyl does concede that assessing the level of "significance" in interpolity interactions is subjective, but the definition on a whole is an improvement to the previous polysemous meanings of "empire."

1.4.3. The Akkadian Empire

Incorporating these ideas of empire into historically specific context, the question naturally arises, was Akkade an empire at all?[90] Following the traditional criteria, Akkade possessed a standing army,[91] which the king used to expand his territory in order to gain wealth through taxes, tribute and plunder establishing an asymmetrical relationship with the local government(s). In order to manage such different ecologies and ethnicities (including linguistic barriers), the king had to centralize their administration, enacting new policies and promoting native practices.[92] All the while, the king adopted a mantra of universal domination and transformed his position from divinely sanctioned to divine embodiment. And, like all other empires, the Akkadian Empire's rise was as glorious as her downfall was traumatic. The Akkadian case satisfies on all counts.[93]

In Motyl's structural model, the crucial question is whether or not the Akkadian kings influenced the relationships between their conquered territories. The standardization witnessed in the writing and metrology—the primary tools of the administration—bespeaks a certain level of

[90] M. Liverani has questioned the classification of the Old Akkadian political apparatus as both an empire and the first of its kind (1993a: 3).
[91] RIME 2.1.1.1. Šarru-kēn provisioned 5,400 troops, which is nine regiments of 600 troops each. If the Old Assyrian "Adad is King!" legend has any credence, Šarru-kēn was responsible for feeding all branches of his military including runners, cup-bearers and the "rear guard."
[92] For those who quibble about size, the Akkadian Empire stretched from the Persian Gulf in the south, to Susa in the east, the Ḫabur in the west, and Mari in the north. For the earliest attempt at empire in the region, with more basic technologies and infrastructure than their grander successors, this was certainly an impressive feat.
[93] Assessing diversity according to Morris' model is problematic in the Mesopotamian sources, specifically because there is rare mention of a person's ethnic affiliation.

influence Akkade asserted on the ability of subject areas to maintain previous practices.[94] More directly, however, is the reorientation of local governors towards the imperial capital; they must now make regular trips to Akkade to report on local affairs to the king as well as provide tribute.

There is also the presence in all the major urban centers of the royal family and their direct agents. This indicates a re-appropriation of local property, perhaps in a similar fashion to the Maništūšu Obelisk. One has only to look at the accounts of Yeṭib-mer in Nippur, Girsu, Umma and Tutub to observe the widespread presence of the Akkadian Empire in local affairs. I would argue that by any reasonable standard, the Old Akkadian polity would pass the litmus test for empire and will be treated throughout this work as the Akkadian Empire.

1.5. Research Questions

The reigns of the Classical kings during the consolidation phase of the Akkadian Empire permit the reconstruction of imperial mechanisms of control through the administrative documents. Despite an empire's goal of territorial integration, not all territories are integrated equally. Throughout the approximately 150-year reign of the Akkadian kings many lands were conquered, annexed or subjugated, however the Diyala region is never recorded as participating in such revolts. The administrative records from the Diyala, therefore, will offer insight into how the conquered are integrated into the empire as well as address the degree of autonomy retained by the local institutions.

The crucial questions addressed in this dissertation are how did the Akkadian kings administer and control peaceful areas? And, how do those mechanisms of control compare to

[94] Particularly insightful evidence in support of an imperial image of Akkade are the identical copies of royal steles found in Nasiriyah and Ḫafajah (Nigro 1998: 99); a Narām-Suen stele at Diyarbakir (RIME 2.1.4.24) commemorating his quelling the rebellion of the Four Quarters, which must have included this area in modern day Turkey; a bulla from Tell Brak (Oates, Oates and McDonald 2001: 131, fig. 160) bears a seal from Gasur. Additionally, several administrative texts denote the convergence of many disparate polities under the aegis of the Akkadian Empire (e.g. MCS 9, 234).

those of the insurgent south? Understanding how the Akkadian kings controlled various territories can deepen our understanding of how ancient Near Eastern empires operated, and more generally, how the imperial form developed from its most nascent stages. The articulation of imperial policy and practice will subsequently allow researchers to more accurately detect local institutions as well. By identifying and isolating those traits that are imperial, a more accurate picture of the local administration can emerge. It is only after the question of imperial policy is addressed that researchers can start to address questions of local ethnicity and identity. This dissertation serves as the missing, intermediate step between the data and current interpretations of regionalisms.

The purpose of this dissertation is not only to assess the level of imperial administrative homogeneity between peaceful and rebellious regions, but also to establish a new methodology for analyzing and evaluating substantial textual corpora. The burgeoning field of digital humanities possesses several tools to aid in such textual analysis. In order to quickly and efficiently identify and isolate meaningful co-occurences of agents, commodities and transactions in the administrative texts, text-mining software is utilized. The patterns discerned from text-mining, after being manually evaluated by the researcher to account for historical nuance and situational context, begin to build regional profiles of administrative behavior, such as the types of commodities acquired or redistributed by imperial agents, the organization of imperial agents, or local idiosyncracies in bookkeeping practices. Once the defining features of the administration from Ešnunna, Tutub and Tell Suleimah are established, those key features will be compared against patterns from the major urban centers of Adab, Umma and Girsu in addition to the northern city of Gasur. Building upon the associations discerned within the mass of data, social network analysis will then be applied to the administrative personnel in an effort

to ascertain the relationship between imperial and local agents. Again, the concatentation of links and relationships will be compared across the major southern cities of Adab, Umma, Girsu as well as Gasur to assess the level of similarity or difference in the overall administrative structure, in contrast to the administrative practices explored with the text-mining tool set.

The methodological implications of this dissertation are far-reaching, offering a first step towards integrating powerful digital tools that are specifically suited to research in the humanities. This methodology is developed specifically to make linguistic or corpus-based research on ancient languages more accessible to specialists and researchers.

Chapter Two

2.0. Methodology

The first goal of this dissertation is to address the research questions outlined in the previous section in order to ascertain the level of universalism in early imperial policy and practice during the Akkadian Empire. The second goal is to begin to develop a sound methodology for implementing digital tools into cuneiform research. Naturally, the methods offered here are tailored to specific objectives of this work; however, many of the initial steps in preparing data and calibrating software settings can be applied to a variety of applications and data sets.

Both the research questions and the digital tool sets operate on two simultaneous levels: the microhistorical and the macrohistorical. The use of microhistories has proven useful for understanding local events in their full context as part of the study of social practices. This roughly atemporal approach contracts the scale of inquiry from the larger macrohistorical purviews. In this approach, the individual is privileged in the sources, allowing for a more detailed description of social, political, economic and ideological interactions. The conglomeration of "little facts" is arranged in order to reconstruct the various features of a local society (e.g. demography, economic systems, kinship relations, institutional power). Here, this requires a restricting of the data set to one geographic region (the Diyala) and one delimitable time period (Classical Sargonic).

This has been the predominant approach to previous studies on the Old Akkadian period with researchers circumscribing their data sets to one archive, location or individual. Philology is the main channel through which scholars have accessed the history of the Old Akkadian society,

using detailed grammatical analysis to render lucid translations of complex material. However, this is only one of the potential vantage points of analysis. Comparisons between regions, cities and individuals are cumbersome and difficult to organize. The complexity, but more directly, the size of the data set has largely prohibited any systematic attempts at broader macrohistorical analysis. However, with the assistance of improved technology, this lacuna can begin to be addressed.[95]

The expanded breadth of macrohistorical analysis, at the expense of the depth of microhistorical studies, permits broader comparisons. However, comparisons cannot be executed uncritically; specific and consistent categories of inquiry must be established to avoid specious parallels.[96] The question of how to compare becomes central. Therefore, three areas of comparison are created to assess the strength of association with the Akkadian Empire: commodities, types of transactions and agents. These three categories address the types of goods that were utilized by the Akkadian Empire, how they were transferred from the local economy to imperial property and who was tasked with facilitating such movements of goods. By contrasting the contexts of each element a local profile can be established, which can then be systematically compared with that of other sites.

[95] I would like to stress here that macrohistorical analysis would be nearly impossible without the extant microhistorical scholarship. A macrohistorical view without a detailed, local counterpart is equally as incomplete as the current situation in Old Akkadian scholarship expressed here.

[96] For some of the theories guiding the historical-sociological approach see Skocpol and Sommers (1980) and Bonnell (1980). The Parallel Demonstration Theory juxtaposes specific historical instances or events in order to substantiate that a particular theory applies to a set of historical cases, while the Contrasting Contexts approach attempts to isolate unique features in each of a set of cases. This contrasts whole histories with pre-given themes in order to articulate general social processes in a descriptive manner. Each approach has its strengths and is suited to particular historical circumstances.
For the purposes of this study the Contrasting Contexts model is most applicable since it draws upon a number of historical cases and derives descriptions of the underlying processes.

With the detailed, close reading of the data that is produced in Chapters Three through Seven for each archeological site, Chapter Eight will incorporate the reconstruction of local practices and begin comparisons. The first step in interpreting the data is identifying key agents and processes that define the imperial administration. By contrasting the paradigm of the Diyala sites against similar data from other Mesopotamian sites, idiosyncratic features can potentially be detected. These features are interpreted through the prism of peaceful vs. rebellious behaviors uniformally applied and resultant imperial responses.

The structure, components and functions of the local and imperial bureaucracies are the main areas of inquiry. Within the paradigm of Classical Sargonic Diyala culture, the scale and data set are reduced. These parameters on the geography and chronology are impelled by the observation that throughout the rebellions during the Sargonic dynasty, only the Diyala area is never recorded as opposing imperial rule. It is this contrast that sets the Diyala region apart from the rest of Mesopotamia in this analysis of how imperial activity was practiced in a peaceful region. This approach is also important in parsing the manifold behaviors of an empire, disentangling the simplistic, monolithic view of empire as a single set of behaviors uniform across their entire domain.

2.1. Text Mining

This philological research also draws upon a large network of word associations, where transactions and relationships are reconstructed through the conjunction of (a) personal name(s), its qualifier (such as a patronymic or title), and/or an action, and/or a commodity. However, the task of manually managing such a large and complex set of relationships exceeds basic mental capacity, therefore integrating technology will help with the data storage, organization and cross-reference.

The software incorporated here, AntConcordance,[97] possesses several desirable functions. The most pertinent to this study are the abilities to ingest large blocks of non-English text in order to run both concordance (sequential) and collocate (non-sequential) searches based on a user-defined keyword and data corpus. While concordance search capabilities are an established resource for text-based research, collocate searches are only newly developed. The collocate technology has the ability to search for all discrete words within a user-determined distance from the keyword, and measure the strength of the relationship between the keyword and all collocated terms based on frequency and distance from the keyword. These measurements are not necessarily the final result, but rather are helpful in discovering potential lines of inquiry for the researcher. Instead of considering every word association relationship as significant, this software reduces the data to the strongest correlations.

2.1.1. Collocation

The collocation tool has several user-defined variables to assist in refining searches. Either a keyword or whole phrase (regular expression) can be searched with optional case sensitivity. The collocation search span from the defined keyword can be adjusted to search for only words occurring within a set number of spaces to the left, right or both. Therefore, it is possible to define a search that only looks at collocated words to the right (i.e. following) the keyword. The exact distance is context specific.[98] Additionally, the user can omit returned collocates that do not occur a pre-determined minimum number of times. Typically, the minimum collocate frequency is set at two so as to eliminate random or insignificant results in

[97] This software has been developed by Laurence Anthony, Professor of Applied Linguistics at Waseda University (Japan) and Director of the Center for English Language Education in Science and Engineering.

[98] For example, the notation PAP is only concerned with the adjacent personal names and therefore a window of 3 or smaller (three words to the left allowing for titles or attached patronyms) is necessary. Alternatively, a broader search of collocates for Akkade could increase the window to 5:5, in order to capture agents associated with the transaction.

small corpora. The returned results can be organized along various priorities including frequency (rank, only results to the left, only results to the right of the keyword), calculated statistical weight and alphabetically. All of these categories can be inverted, which for long lists is helpful for viewing negative results.

In order to ensure that collocations are only occurring within a single ancient text that is part of the longer master file of all texts, five returns are inserted between each distinct tablets' text. A non-meaningful "word" is embedded in the return lines that will prevent collocation tool from assigning proximity to words from different texts, so long as the window does not exceed five in the AntConcordance settings. For example, if the target word occurs in the last line of one text, inserting five "words" until the next discrete text will prohibit the software from using any words in the first lines of the following text in calculating collocation for the target word. The symbol "." was chosen as the non-meaningful word because it is a necessary notation in cuneiform words given the standards for multiple-constituent sign transliteration and has no inherent linguistic value. Any results that return "." in collocation will be disregarded. An example of this spacing format between two adjacent, yet unrelated texts, is presented below.

sze
da-kum
im-hur
in a-wa-al{ki}
.
.
.
.
.
sze 2-UL
ur-{d}suen
sze ur5-kam
in a-ba-bi{ki}

Calculations for collocation are predicated upon measuring frequencies, both the frequency of the search term—or node (f(n))—and collocate (f(c)) both in isolation within the

data corpus and in conjunction with one another (f(n, c)).[99] This measurement moves beyond raw frequencies to capture observed, and project expected, frequencies. The observed frequency is simply a measurement of the joint frequency (f(n, c)) divided by the corpus size (N).[100] The expected frequency calculates probability of occurrence by multiplying the result of the node and collocate raw frequencies divided by the corpus size:[101]

$$E = f(n) / N \times f(c) / N$$

With both the observed and expected frequencies established, the program can then quantify the chance of collocation of any two items. AntConcordance permits two distinct methods of producing this statistical result. The first is Mutual Information based on an I-value, which measures the *relative* frequency of words independently and in collocation (Church and Hanks 1990: 23). The second is a T-score built upon a T-value, which is the measure of *absolute* frequencies of collocations. Each value has its strengths and weaknesses; for example, the I-score is symmetric, meaning that *ište* šabra ("with šabra") and šabra *ište* ("šabra with") yield the same measurement. However, the order of specific collocates is certainly significant in most natural languages. The first example indicates that a commodity is coming from the possession of the šabra official, while the second example cannot offer any such claim within the constraints of Akkadian grammar. Additionally, K. Church and P. Hanks note that it is difficult to identify collocations that fall below chance with the Mutual Information approach (1991: 7). Both formulae used together yield a more accurate representation of statistical significance, therefore both I-values and T-values will be given throughout this dissertation; both are crucial for assessing the relationship between target words.

[99] Formulae and terminology follow Stubbs (1995).
[100] O = f(n, c) / N.
[101] Alternatively captured in the formula $E = f(n)f(c) / N^2$.

The I-value addresses the strength of the result, while the T-value demonstrates the validity of a result. The formulae are as follows:

$$I(n, c) = \log_2 \{[f(n, c) \times N] / f(n)f(c)\}$$ [102]

$$T = \{[f(n, c) / N] - [f(n)f(c) / N^2]\} / \{[\sqrt{f(n,c)}] / N\}$$ [103]

The I-value correlates to the corpus size (N), where the larger the corpus, the larger the I-value. Therefore, this threshold for significant I-values needs to be calibrated to the corpus size. Fortunately, the collocation results are ranked and therefore offer some form of calibration dependent upon the corpus size. Additionally, if the ratio between joint to independent frequencies remains constant, the I-value will actually decrease as the raw frequency of joint occurrences increases (Stubbs 1995: 10). Traditionally, corpus linguistics looks at corpora of upwards of one million English words. However, I am limited here by the historical record whereby the currently available Old Akkadian corpus is comprised of only approximately 100,000 unique whole words (inclusive of many personal names).

To illustrate the function of these equations, let us assume some nicely rounded example data. In a corpus of 100,000 words, the node (f(n)) occurs 1,000 times and the collocate (f(c)) appears in 500 instances. Together (f(n, c)) these two terms occur 100 times. The values would be calculated as follows:

$$I(n, c) = \log_2 \{[100 \times 100{,}000] / [1{,}000 \times 500]\}$$
$$= \log_2 \{[10{,}000{,}000 / 500{,}000]\}$$
$$= \log_2 20 = 4.32$$

$$T = \{[100 / 100{,}000] - [(1{,}000 \times 500) / 100{,}000^2]\} / \{[\sqrt{100} / 100{,}000]\}$$
$$= \{[.001] - [500{,}000 / 10{,}000{,}000{,}000]\} / \{[10 / 100{,}000]\}$$
$$= \{.001 - .00005\} / \{.0001\}$$
$$= .00095 / .0001 = 9.5$$

[102] Or more simply, $I(n, c) = \log_2 O/E$.
[103] Also simplified as $T = (O - E) / \{[\sqrt{f(n,c)}] / N\}$.

So, what do these numbers mean? Admittedly, these values are relative and meaningful correlations are a product of subjectively established thresholds. However, based on previous corpus linguistic research, M. Stubbs suggests that I-values below three and T-values below two are meaningless, as are single collocate occurrences (1995: 13; Church and Hanks 1990: 24).

2.1.2. Word List

In addition to the search capabilities, AntConcordance compiles word lists, which tally the raw frequencies of all discrete words in the data corpus. The raw frequencies generated in the word list are used by other features of the software to calculate collocates, N-grams, keyness, etc. To compensate for grammatical variation, the software has a simple lemmatization procedure, whereby all derivations of a specific verb can be counted under the same frequency. The format for this command is as follows:

imhur->im-hur im-hu-ra im-hu-ru im-hur-ra tam2-hur

This extends to specific titles and toponyms, but not to personal designations (e.g. $ARAD_2$ and ARAD; $azlag_2$, $azlag_3$, $azlag_4$; dumu-me, dumu, dumu-dumu, etc.). Variation in personal name spelling cannot, with any degree of certainty, be correlated to the same individual. The lack of confidence in standardizing names is due to the very large populations and potentially high degree of homonymy—distinct individuals bearing the same name (e.g. Julie Kim, Juan Carlos, John Smith, etc.) Therefore, small differences in spelling could reflect crucial distinctions in pronunciation or mere regional orthographic conventions. It is nearly impossible to ascertain either way. There are far fewer known toponyms and office titles, which lends more security to their interpretation.[104] Therefore, personal names are left unlemmatized.

[104] This is strengthened by their use in the lexical list tradition. Office titles and city names are part of a continuous canonical practice dating back to 3200 BCE.

There is also a stop word list feature available that allows the user to define the word(s) to be omitted from the word list generation. This is particularly useful for cancelling out interference from broken passages (e.g. …, x-i_3-li_2, …-dingir, etc.). The stop word list is created from extracting all words from the word list containing "…", or broken sections. This can be done for each file individually, or with the entire set at once. This is easily accomplished using the various sort preferences and simple copy and paste.

Overall, this simple procedure allows for more accurate representations of word frequencies throughout the corpus. This is particularly important for the word list tool because it is the foundation for statistical comparisons in the keyword list function. Therefore, this list must reflect only whole words (i.e. meaningful lexemes).

2.1.3. Keyword Lists

This tool calculates those words that are *unusually* frequent or infrequent between a comparison of two different corpora. Here, as with the collocate tool, there are two distinct methods for quantifying statistical measures: log likelihood and chi-square.[105] Following the recommendation of the software creator, the log likelihood value will be maintained over the chi-square value.[106] The log likelihood value does not assume that the data is normally distributed, which matches the inherent unpredictability in natural language corpora. The following significance values have been established by the software creator:

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[105] The log-likelihood is an algorithm that measures the probability that a set of data would occur naturally. The algorithm is defined as: $L(\theta|x) = P(x|\theta)$ where the likelihood (L) of the specific parameters (θ) is determined by the outcome(s) (x). This is equal to the probability (P) of the observed outcomes (x) given the specific parameters (θ).
Chi-square is defined as: $x^2 = \sum(O - E)^2/E$ where O is the observed frequency and E is the expected frequency. A chi-square test is a statistical test that can be used to assess independence/dependence and goodness of fit between two or more observations.

[106] As T. Dunning (1993) indicates, the chi-square measurement is unreliable for low frequency words, those occurring less than five times and analysis of small corpora, those with fewer than 50,000 words. This would have serious repercussions in the smaller text corpora from the Old Akkadian period.

Percentile	Level	p Value	Critical Value
95	5%	< .05	3.84
99	1%	< .01	6.63
99.9	.1%	< .001	10.83
99.99	.01%	< .0001	15.13

Table 4: Significance Values

This critical value is essentially a measure of a word's "keyness," quantifying a word's uniqueness in either the test corpus (positive values) or references corpus (negative values). Negative values indicate a high frequency in the reference corpus but a lack of corresponding frequency in the test corpus. Contrariwise, positive values rank words that are more common in the test corpus than the reference corpus. The closer the keyness measurement (critical value) is to zero, the less interesting the result is. Corpora that have quantitatively low keyness measurements are considered to be categorically similar.

Since this is a measure of word frequency independent of position (contra collocate searches), all unnecessary returns and broken passages are removed. This includes "…" and "x" and all variants therein (e.g. x-…, …-x, …-x-…, etc.). This is a necessary step in this particular tool because both "x" and "." are permitted as words given the ATF notation of the cuneiform data;[107] therefore, this wrongly distorts the total number of unique words in the corpus, which will affect the overall keyness value.[108]

This tool is specifically useful for assessing corpora similarity, which is a powerful way of determining possible provenience for unprovenienced texts. In Chapter Six, which addresses the unexcavated "Diyala" corpus, the keyword tool will be utilized to measure the level of similarity between the "Diyala" administrative texts and those from Ešnunna, Tutub, Tell Suleimah, Kiš and Girsu (as the control site). The result should not be taken as a definitive

[107] ATF is the acronym for ASCII transliteration format.
[108] This is done in place of a Stop Word List.

answer, but as one of several methods of evaluation that should be combined with expert paleographic and prosopographic analyses.

2.2. Standardization of the Old Akkadian Corpus

Before analysis of the text corpus could be attempted, the individual sign readings as well as the consistent definition of a word for both Sumerian and Akkadian languages had to be established. Expectedly, there are several conflicting approaches to transliteration; relevant to the Old Akkadian corpus is the transliteration system developed by I. J. Gelb, which contrasts with that of W. von Soden.[109]

Appealing to the uncertainties of Old Akkadian pronunciation, Gelb utilized only the most basic reading, typically the voiced and unemphatic version, of the sign.[110] That is not to suggest that Gelb left signs largely uninterpreted; the NI sign is read as i_3, li_2, *ni*, ne_2, ia_3 per semantic context. Conversely, W. von Soden prefers to proffer linguistic interpretation through his rendering of the signs in a close approximation to the actual, estimated pronunciation (e.g. GA is *ga*, ka_3 or qa_2). This approach results in a plethora of diacritics and reconstructed, hypothetical phonemes, which R. Hasselbach, W. Sommerfeld and A. Westenholz all rightly criticize as lending itself to unnecessary confusion (Hasselbach 2005: 24-25; Sommerfeld1999: 24; Westenholz 1996: 119-120).[111] However, a balance must be struck between these two extremes in order to facilitate clear grammatical interpretation on the part of the researcher in

[109] A thorough evaluation of the advantages and disadvantages of each of these two transliteration systems is given in Sommerfeld (1999: 24-25). Given this detailed treatment, only a basic summary is provided here.

[110] This basic reading is defined as the first value given to the sign in the Neo-Assyrian period, more than a millennium after the end of the Old Akkadian period (Gelb 1970c: 534). This clearly presents its own set of interpretative problems, such as the *seemingly* aberrant readings $iš_{11}$, ru_{12}, ri_2, etc. for this period.

[111] In von Soden's system, the main source of confusion is the treatment of sibilants, which will be addressed separately below.

accordance with precise linguistic realizations of the orthography. This compromise follows the approach of Sommerfeld,

> Da es letztlich meine Absicht ist, zur Erschließung der altakkadischen Sprache auf dem heute möglichen Forschungsstand beizutragen und die altakkadischen Texte in Editionen vorzulegen, die auch dem Nichtspezialisten den Zugang erleichtern sollen, habe ich mich für einen pragmatischen Mittelweg entschieden. Ich gebe in den Transliterationen möglichst viele Verständnishilfen und verwenden dazu das interpretierende System von Sodens, wenn die akkadische Etymologie gesichert oder zumindest sehr wahrscheinlich ist und wenn die Morphologie transparent ist, und in allen unklaren, unsicheren und mehrdeutigen Fällen einfache Lautwerte im Sinne der Prinzipien von Gelb. Zusätzlich sind akkadische Sprachformen in Kursivschrift gesetzt, um das eindeutig akkadische Sprachgut gegenüber allen anderssprachigen oder mehrdeutigen und unsicheren Elementen abzuheben. (1999: 25)

Therefore, *where known*, the appropriate value (voiced, voiceless or emphatic)[112] will be transliterated. This permits the etymological clarity of von Soden's system but relies on Gelb's consistency for uncertain readings. This method forces a certain number of unique sign readings for the Old Akkadian period, but they are not unwarranted. Given the experimental nature of early attempts at adapting a syllabo-logographic system to a heavily syllabic writing system, variation is expected.

The number and nature of Old Akkadian sibilants is an undecided matter, yielding several contradictory paradigms. The exact relationship between the sign name, later Old Babylonian pronunciation and Old Akkadian pronunciation is murky at best (Faber 1981, 1985; Hasselbach 2005: 95-96). The following table summarizes the systems put forth by Gelb as well as more recent work by Hasselbach and Sommerfeld.

[112] In the case of the PI sign, the variation is between labial and glide.

	*/s/	*/š/	*/ś/	*/ˀs/	*/ˀṣ/	*/θ/	*/ð/	*/z/
Gelb	ZA, ZI, ZU	SA, SE_{11}, SI, SU	SA, SE_{11}, SI, SU	ZA, ZI, ZU	--	ŠA, ŠI, ŠU	SÁ, $ŠE_3$, SU_4	ZA, ZI, ZU
Hasselbach	SA, SE_{11}, SI, SU	ŠA, ŠI, ŠU	SA, SE_{11}, SI, SU	ZA, ZI, ZU	ZA, ZI, ZU	ŠA, ŠI, ŠU	ZA, ZI, ZU	ZA, ZI, ZU
Sommerfeld	ZA, ZI, ZU	SA, SI, SU	SA, SI, SU	ZA, ZI, ZU	ZA, ZI, ZU	ŠA, ŠI, ŠU	ZA, ZI, ZU	ZA, ZI, ZU

Table 5: Old Akkadian Sibilants

To reconcile the practice of marking the same sound with /s/ in Old Akkadian but /š/ in Old Babylonian, von Soden introduced the orthographic notation "ś" to indicate a lateral phoneme between /θ/ and /s/. The orthographic system regarding sibilant representation is reformed in the Old Babylonian period, making it an inadequate model for reconstructing Old Akkadian orthography let alone phonology (Sommerfeld 1999: 26).

	*/s/	*/ś/	*/ˀs/	*/ˀṣ/	*/θ/
Old Akkadian	SA	SA	ZA	ZA	ŠA
Old Babylonian	ŠA	ŠA	SA	ZA	ŠA

Table 6: Old Akkadian vs. Old Babylonian Sibilants

Moreover, by the time of Narām-Suen, if not slightly before, the signs SA and ŠA were regularly confused by Old Akkadian scribes (Westenholz 1996: 120). Therefore, to the question of transliterating the sibilants in the Old Akkadian corpus, minimal interpretation is preferred, leaving the basic reading of the sign unaltered. However, there are cases of clear and continuous etymology, particularly in verbal forms, where an interpretation is made (e.g. si_2 in lieu of *zi* in *na-zi-iḫ* [*nasāḫum* "to tear out"] and *ip-lu-zi* [*palāsum* "to look at"]). Because this is not a study of Old Akkadian linguistics or phonology, adherence to the overall tradition of the writing system is preferred, especially since it lends coherence to the non-specialist reader (e.g. $sa\text{-}du_2$ instead of $ša_{10}\text{-}du_2$ "mountain").

2.2.1. Text Formatting

Once the corpus was standardized, the approximately 95,000 lines of text had to be formatted to the specifications of the software and the research questions. First, the CDLI compliant headers and commentary were removed using BBEdit grep command lines.[113] Similarly, the individual line numbers were erased. Individual texts are separated by several returns in order to maintain a distinct between individual inscriptions. The obverse, reverse or columns of a text run continuously, reconstructing the original essence of the inscribed message.

Second, specific markers for broken, questionable or emended readings were removed, as well as the language shift markers "_". This was done in order to reduce the text to the basic word intended by the original author devoid of regional variation allowing for more efficient comparisons in software that looks for exact character matches. Following this logic, x-readings and altered "!"-readings for signs were amended to their intended contextual reading (e.g. tum_x → tum_2; zu!(SU) → zu). The reordered sign sequences marked with ":" were changed to the standard sign connector "-" in order to represent the intended word. However, breaks and "x" characters were retained in order to maintain the original distance between separate words. As a final step, one space was added to the end of each line to facilitate the AntConcordance software that recognizes word limits by spaces. This was accomplished with a simple non-Grep command in BBEdit: " \r". To remove duplication of pre-existing line final spaces a second command was run to reduce double spaces to single spaces: " \r" → " \r".

Third, all quantities were erased.[114] The individual numbers would not interfere significantly with collocate searches. However, the retention of quantities would skew the collocation and keyword results. For example, a collocation search for a personal name would

[113] "^&P\d+ = .+" for identifying tags and "^#atf:.+ \r@tablet \r@obverse \r" for text tags.
[114] " \d.+@c. " for curvilinear numbers. Note the spaces embedded before and after this specific command.

return results that included the specific quantities of an item he received, but the research question is specifically oriented towards connections between individuals. More damaging is the presence of quantities in the keyword search, which would incorporate the frequency of specific numbers in its overall analysis of comparability of two or more corpora.

An example of this transformation is presented below.

```
&P212832 = BIN 08, 288
#atf: lang sux
@tablet
@obverse
1. 1(gesz2@c) la2 2(asz@c) gurusz#
2. lu2 gub-ba-a#
3. 1(gesz2@c) 2(asz@c) ki szu-ix(ASZ3) er2-du8
4. 5(asz@c) ki uz-ga
5. 2(u@c) 1(asz@c) ki gesz-i3
6. 5(asz@c) ki gu4 niga
7. 2(asz@c) ur-{d}inanna
8. 1(asz@c) i3-du8 e2-ansze
9. 1(asz@c) i3-du8 tum-x
10. [n] 1(asz@c) e2 [...]
@reverse
1. [...] in [...]
2. 1(u@c) sze [...]
3. 6(asz@c) tu-ra#
4. 4(disz) ba-usz2
$ blank space
5. |SZU+LAGAB| 3(gesz2@c) 1(u@c) la2 1(asz@c) gurusz
6. su-birx(|SZIMxNIG2|)-x
```

```
gurusz
lu2 gub-ba-a
ki szu-i er2-du8
ki uz-ga
ki gesz-i3
ki gu4 niga
ur-{d}inanna
i3-du8 e2-ansze
i3-du8 tum-x
e2 ...
... in ...
sze ...
tu-ra
ba-usz2
|SZU+LAGAB| gurusz
su-bir-x
```

2.3. Network Analysis

More properly termed Social Network Analysis (SNA), this method of visually representing associations between individual actors has developed into a significant analytical tool. SNA has primarily been applied to the field of sociology but its relevance and use to related fields is apparent. While the network is comprised of individual actors, it is the relationships, the connections, between actors that are the focus of the inquiry. The models can become quite complex, involving layers of perception, density and social capital (Waerzeggers forthcoming: 4). For the purposes of this study a simple approach to basic network analysis is utilized, partially motivated by limitations in the cuneiform source material.

The underlying tenet of SNA is the concept of "connectedness" or a lack thereof (Easley and Kleinberg 2010: 4). Within this paradigm, concepts such as social distance, cliques and hubs (i.e. social clusters), and social accessibility can be studied by recreating in a visual map the flow of information or interactions between individuals. This extends to either a whole network or an egocentric analysis.[115] The property of the relation itself, in this specific study, is the strength of the interaction—that is the frequency of co-occurrence of two or more actors. This is a binary approach that either marks the presence of absence or a relation.

> This approach privileges structure in the analysis; here structure means,
>
> the pattern of social relationships linking actors. The actors may be people, organizations, positions within organizations, city-states, nations, families, and so on. The links may be friendship, hatred, trade, war, alliance, or any other relationship of interest. (Erickson 1997: 149).

In the cuneiform administrative material, the structure is between individuals, occasionally offices, linked together by meaningful co-occurrence in the administrative record. "Meaningful" here is rather subjective, but I use it to guard against incorporating examples of long ration lists devoid of internal structure (i.e. ugula or nu-banda$_3$ groups, artisan or household designations, etc.) or the like.

Following the same parameters in software selection for text mining, Cytoscape (v.3.0.0)[116] was selected because of its ability to run on either Macintosh or PC platforms, and its *gratis* price tag. This is motivated by the wish that the methods developed in this dissertation are

[115] In egocentric networks one individual is the center of the network and only agents directly connected to the central figure are included. This can extend to second, third, etc. neighbors, but the purpose remains to explore the network of a single individual. Conversely, a whole network looks at the interconnections of every actor, which can sometimes results in two or more separate, unconnected network formations.
[116] This software was originally developed for genetic research, but has been adapted for a more general use. It was developed through collaboration between UC-San Diego's medical school, UC-San Francisco's Gladstone Institutes and Resource on Biocomputing, Visualization, and Informatics, Agilent Technologies (California), the Institute for Systems Biology (Washington), Sloane-Kettering Cancer Center (New York) and the Bader Lab at the University of Toronto.

easily reproducible, and therefore more quickly improved upon, by other specialists. It is in the spirit of open access to all corners of knowledge that this tenet is adopted herein.

To illustrate the concepts of SNA, I have chosen the small archive of Lugalra, a cadaster official (Sumerian: sa_{12}-du_5; Akkadian: *šassukkum*) of the queen from the Girsu/Lagaš region to serve as a simple example (Kienast and Volk 1995: 88). The archive of Lugalra is comprised of 285 actors and 1,098 individual relations.[117] To serve as a simplified example of the SNA process and result, the first neighbors, those with a direct link to Lugalra, are illustrated in the following network visualization.

Lugalra's immediate network consists of 17 nodes and 58 edges between nodes. Offices are distinguished from personal names here by color, with the ensi-gal ("chief governor") represented by yellow.[118] The strength of the connection between two nodes is depicted in two ways, the first by a number on its edge indicating the number of co-occurences between agents.

[117] In this process there is still a level of subjectivity since the researcher must determine which names or titles are referring to the same person. The issue of homonymy is ever-present in the cuneiform sources and must be addressed in the data prior to the creation of the network, however the network itself may in fact help reconcile ambiguities in certain cases of individuals (Waerzeggers forthcoming: 15). As a rule, names with specific patronym are kept separate from identical names without patronyms. This is only initial caution that may be adjusted upon further investigation.
The archive of Lugalra is comprised of the following texts: MAD 5, 105-113; FAOS 19, Gir 19; DPA 1-43 and 47-51; TMM 175-210 (Third-Millenium Miscellany; Westenholz, forthcoming [in CUSAS]). A total of 99 texts have been published for Lugalra's archive to-date.
The consitution of the individual three main archives (excepting the lone letter of FAOS 19, Gir 19) are as follows:

Publication	Actors/Nodes	Relations/Edges
MAD	32	104
DPA	122	478
TMM	131	516

[118] The ensi-gal is formally $ensi_2$-gal. The names are normalized in the SNA visualization to aid the non-specialist reader. The accompanying English translation of such normalized offices should make the interpretation clear to the specialist.

The second method is by the thickness of the connecting lines (i.e. the darker the line, the higher the frequency of interaction).[119]

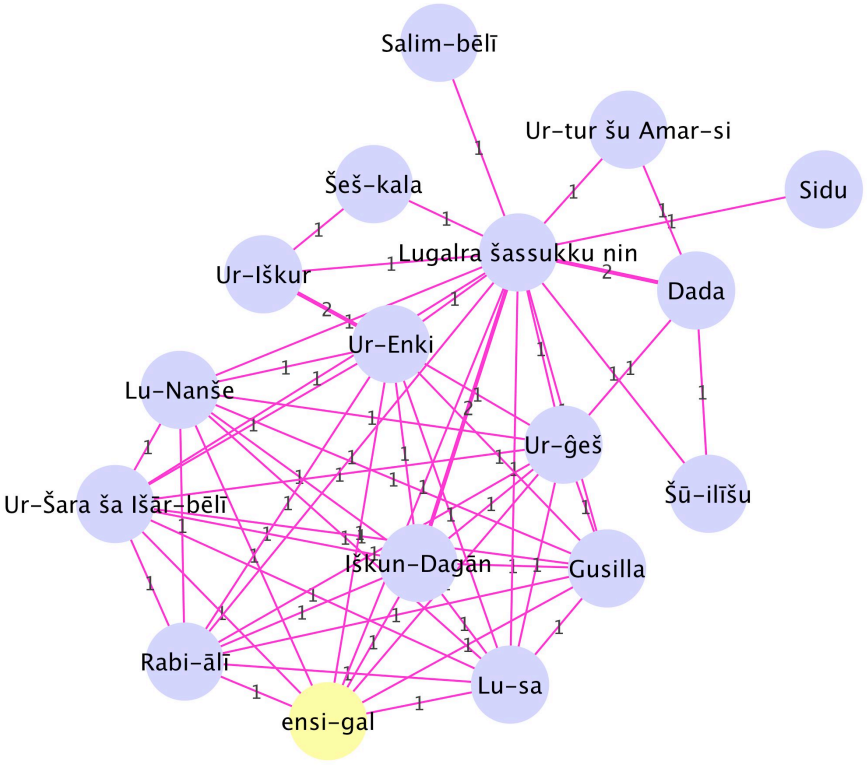

Figure 9: Social Network of the Lugalra Archive

In this egocentrically defined network, Lugalra is a major hub, a node that experiences a high number of edges in comparison to all other nodes in the same network. Such hubs are identified using the node degree distribution measurement, which is a simple tally of the number of first neighbors of a single node. Since Lugalra is the center of this network, he is a first neighbor to all other 16 nodes. Additionally, Lugalra is part of a cluster comprised of Lu-Nanše, Ur-Šara, Rabi-ālī, Lu-sa, Gusilla, Ur-ĝeš, Ur-Enki, Iškun-Dagān and the ensi-gal. Such clusters represent groups of actors that form some socially, economically, politically, ethnically or

[119] There are numerous algorithms available to visually organize the data according to various aspects; this requires a bit of experimentation in order to ascertain the presentation that best captures the qualities of the expressed network. The networks presented in this dissertation are exclusively arranged manually; however, I use various algorithms to assist in detecting patterns and pathways.

culturally coherent party. From this cluster, Ur-Enki connects Lugalra to other parts of the wider network; in this way Ur-Enki acts as a bridge within the network, connection clusters or sub-networks to each other. Bridges can be identified by calculating the betweenness centrality of all nodes. This is a measurement of the number of shortest paths between two nodes in relation to the number of shortest paths through a third node.[120]

This representation also reflects connections between the texts published in MAD 5 and DPA through Šeš-kala.[121] In MAD 5, 111, Lugalra appears in conjunction with Šeš-kala, each recorded with a large amount of grain in Girsu. Similarly, in DPA 23, both men occur together with modest amounts of small cattle, but also in conjunction with Ur-Iškur. Through this connection Šeš-kala now has access to the cluster through Ur-Iškur, and adds confidence to the overall coherency of this archive despite its piecemeal publication.

This visual aid is generated with complex and subtle underlying mathematical formulae. Cytoscape calculates various measurements of each node and edge, two of which are important in this analysis. Quantified values will accompany each discussion of individual networks to better illuminate obscured features of large networks. The measurements for node hubs and bridges are given for the Lugalra network in the following table.

[120] Cytoscape uses the following forumula to calculate betweenness centrality: $C_b(n) = \sum_{s \neq n \neq t}(\sigma_{st}(n)/\sigma_{st})$ where *s*, *t* and *n* are all distinct nodes in the network and σ_{st} represents the number of shortest paths between *s* and *t* and $\sigma_{st}(n)$ represents the number of shortest paths between *s* and *t* that node *n* lies on. This number will be between 0 and 1. The closer to 1, the higher the concentration of pathways through the node and thus its likelihood of being a bridge within the network.

[121] This interpretation highlights the issue of homonymy in the cuneiform sources, specifically the confidence with which the researcher can assume the occurrences of the same name reflect the same individual. Typically details about paternal lineage or occupation help resolve such ambiguities, but in the absence of such cues context is the main guide. Here, I have assumed Šeš-kala in the MAD 5 and DPA texts to be the same because of the individual's connection to both Lugalra and Ur-Iškur.

Node	Node Degree Distribution	Betweenness Centrality
Lugalra	16	.637
Ur-Enki	10	.026
Ur-ĝeš	10	.026
ensi-gal	9	0
Gusilla	9	0
Iškun-Dagān	9	0
Lu-Nanše	9	0
Lu-sa	9	0
Rabi-ālī	9	0
Ur-Šara ša Išār-bēlī	9	0
Dada	4	.010
Ur-Iškur	3	.007
Šeš-kala	2	.007
Ur-tur šu Amar-si	2	0
Šū-ilīšu	2	0
Salim-bēlī	1	0
Sidu	1	0

Table 7: Network Measurements for the Luglra Archive

With the quantified data patterns become clearer and more substantiated. The calculations certainly support the observation that Lugalra is both a hub and a bridge. However, this is to be expected in this delimited network of only first neighbors of Lugalra—of course he would be at the center of such a network. However, without Lugalra, Ur-Enki and Ur-ĝeš as the main bridges for this network.

With this digital tool it becomes easier to observe information pathways, social clusters, bottlenecks and hierarchies recorded in the cuneiform texts.[122] Moreover, the ability to quantify such observations provides a solid basis for forming hypotheses about the structure and behavior of individuals operating in the Old Akkadian administration. This approach will be applied to

[122] Often, but not always, the symmetrical clusters are a result of individuals appearing together in a ration list; this is most likely the case for low frequency clusters, such as that in the Lugalra archive centered on Iškun-Dagān.

specific scenarios uncovered through the text mining to probe deeper into the organization of the Akkadian Empire in Chapter Seven.[123]

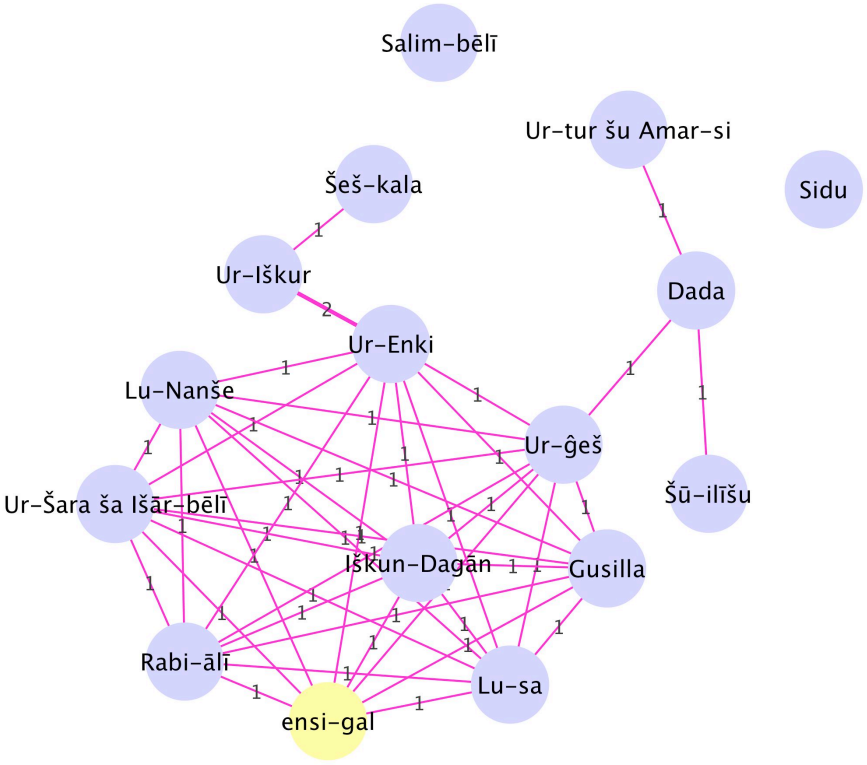

Figure 10: Ur-Enki and Ur-ĝeš in the Lugalra Network

2.4. The Text Corpus

As with other periods of Mesopotamian history, administrative records comprise the bulk of textual witnesses: nearly 90%. A recent search of CDLI files shows just under 7,200 known Old Akkadian administrative texts.[124] Approximately 5,500 texts are published and therefore

[123] This is not the first work to introduce SNA to Assyriology. The Italian ENEA-GRID team has applied network analysis to specific archives at Nuzi; the Berkeley Prosopography Service plans to launch "an open source digital toolkit that extracts prosopographic data from TEI encoded text and generates interactive visual representations of social networks" (NEH Query Form). Most promising is the work being done by C. Waerzeggers at Leiden on the Neo-Babylonian priesthood (cf. Jursa 1999).

[124] There are, of course, additional numbers of unpublished materials in museums, which will not be included in this study. G. Visicato's study on scribes in the third millennium lists small caches of unpublished material, but he has not located any unpublished material for the Diyala or Jebel Hamrin sites (2000). Additionally, B. Foster knows of no relevant unpublished material in the Yale collections

accessible in some form. Already in preparation are editions of Sargonic texts from Adab and surrounding areas, which will add several hundred new texts to the corpus.[125] The distribution of the quantities of texts per site during this period is as follows:

Site	Tablet Count	Published Tablet Count	% Electronic Transliteration of Published Material[126]
Unknown	1,931	953	59%
Girsu	1,880	922[127]	77%
Adab	1,427	1,148	98%
Nippur	592	292	79%
Umma	477	383	83%
Ešnunna	210	210	100%
Gasur	192	192	100%
Varia[128]	109	99	100%
Susa	94	94	100%
Diyala	81	81	100%
Nagar (Tell Brak)	70	70	100%
Kiš	67	67	100%
Tutub	66	66	100%
Tell Suleimah	47	47	100%
Ur	46	46	100%
Mugdan (umm el-Jir)	39	39	100%

(personal communication, December 16, 2011). W. Farber has stated that there is no unpublished Old Akkadian Diyala material housed in the Oriental Institute collections (personal communication, January 10, 2012). C. Reichel, Director of the Oriental Institute's Diyala Project, also is not aware of any unpublished Diyala texts relevant to this corpus (personal communication, February 27, 2012). W. Sommerfeld is currently preparing the approximately 30 fragmentary tablets not published by F. Rasheed from Tell Suleimah, but from various periods; he knows of no other unpublished excavated Diyala materials (personal communication, December 24, 2011). P. Steinkeller believes there may be a small number of Diyala tablets in the Sulaymaniyah Museum, but none to his knowledge in the Harvard Semitic Museum collections (personal communication, December 16, 2011). C. Saporetti, Director of the Center for the Study of the Diyala knows of no unpublished Diyala texts (personal communication, December 16, 2011).

[125] Forthcoming publications given by D. I. Owen in the introduction to CUSAS 19 include CUSAS 20 (Sargonic texts) by P. Notizia and G. Visicato and CUSAS 21 (Sargonic texts) by L. Milano and A. Westenholz.

[126] To date I have added approximately 1,700 new transliteration files to the pre-existing CDLI corpus of ca. 2,350 transliterated texts. I have "cleaned" the entire corpus of both pre-exisiting and new transliteration files for the Old Akkadian corpus to usable standardization.

Table 8: Old Akkadian Corpus by Site

However, not every text from the Old Akkadian period is reflective of the same phase. The rapid phase of imperial expansion was completed under Šarru-kēn, likely late in his reign and possibly continued by his immediate successor, Rīmuš (Westenholz 1999: 36-37). The consolidation of the empire was a longer stage, but one that culminated in the reign of Narām-Suen, who oversaw widespread bureaucratic standardization and local administrative centers in the south. The changes in tablet shape, paleography and metrology allow the modern researcher to differentiate between earlier and later texts. Therefore, in order to reduce the temporal variance in the data set only Classical period texts will be included in this study (Postgate 1994:10). Fortunately, the majority of Old Akkadian texts are Classical, so this will not result in a significant loss of data (Gelb 1961: 10; Foster 1982e; Michalowski 1987: 57; Steinkeller 1993: 127; Hasselbach 2005: 11).[129]

2.4.1. The Diyala Corpus

The core of my data set is comprised of 407 texts from three sites: Ešnunna (Tell Asmar), Tell Suleimah, Tutub (Ḫafajah) and Tell Agrab. There is also a modest collection of tablets that can only generically be assigned to the Diyala since their place of origin is based exclusively on internal data. In this study all text genres will be incorporated into the analysis. However, I must remark upon the difficulty of assigning genre through the prism of modern categories and

[127] This published count does not include those tablets included only in summary form without image in ITT 1 and 2. Those tablets are considered here still unpublished, since their contents are still inaccessible to scholars.
[128] Tell Mozan, Isin, Sippar, Sagub, Zabalam, Abu Juwan, Lagaš, Tell Agrab, Chagar Bazar, Fara, Kutha, Mari, Tell Sweyhat, Uruk, Aššur, umm el-Ḥafriyat. There are, of course, more tablets from umm el-Ḥafriyat housed at the Iraq Museum, but their contents will not be shared prior to publication.
[129] According to Foster's assessment of all Old Akkadian provenienced administrative texts, only Nippur Archive V and Umma Archive A were written during the Pre-Classical Sargonic period (1982e: 5). Since his assessment, G. Visicato and A. Westenholz have published 264 Early Sargonic tablets from Adab.

interpretations.[130] For instance, should all literary texts be classified as school exercises? Are legal contracts sufficiently distinct from our definition of administrative documents to be excluded? Should letters that discuss private business be omitted from discussions of administration? Conversely, these "non-administrative" texts often do not employ the same standardized language, register and format making simple comparisons problematic. Therefore, I believe it is optimal to integrate these ancillary documents to supplement hypotheses or conclusions, but not to force any conclusions based on their format, paleography, formulae, etc.

Site	Tablet Count
Ešnunna	210
Tutub	66
Tell Suleimah	47
Diyala ? [131]	81
Tell Agrab	3
Total:	*407*

Table 9: Core Corpus by Site

A group of 67 Old Akkadian texts purchased by the Oriental Institute in 1930 from clandestine excavations was published by I. J. Gelb in MAD 1 (nos. 270-336) and assigned an Ešnunna provenience. This is separate from the 53 tablets published by Gelb in OAIC, and generally attributed to the Diyala with no detailed information on their exact provenience; however, subsequent scholarship has attributed them to Ešnunna as well. A. Westenholz believes that given the extensive looting from the robber hole at Ešnunna prior to the Oriental Institute's excavations in the 1930s, all purchased tablets originating from the generically defined "Diyala region" should be attributed to Ešnunna (1984: 19, fn. 4). Before accepting this proposition, I would like to take a closer look at the tablets to test this hypothesis.

[130] R. Hasselbach distinguished three main genres in Old Akkadian based on their linguistic profiles: letters, administrative and all others (literature, royal inscriptions, seals, incantations and school texts) (2005: 10).

[131] I have been unable to substantiate C. Saporetti's claim that Uch Tepe excavations produced Akkadian tablets (2000: 135).

Given the scattered state of the excavated Diyala region cuneiform tablets, no single, unified treatment of the texts is available. Therefore, a summary of these texts is presented in the table below.

Publication	Alternate Publication	Provisional Provenience
***AuOr* 9, 4 (MM 401)**	*OrNS* 51, p. 362	Ešnunna
***AuOr* 9, 5 (MM 497)**	*AnOr* 7, 372	Ešnunna
***AuOr* 9, 6 (MM 526)**		Diyala
***AuOr* 9, 7 (MM 697)**		Diyala
***AuOr* 9, 8 (MM 560)**		Diyala
***AuOr* 9, 9 (MM 937)**		Diyala
CUSAS 13, 161		Diyala
FAOS 19 Di 1	*JEOL* 24, p. 105	Diyala
FAOS 19 Di 2	MVN 3, 101	Diyala
FAOS 19 Di 3	OAIC 53	Diyala
FAOS 19 Di 4	CT 50, 70	Diyala
FAOS 19 Di 5		Diyala
FAOS 19 Di 6	OAIC 47	Diyala
FAOS 19 Di 7	OAIC 52	Diyala
FAOS 19 Di 8	*JCS* 26, 6	Diyala
FAOS 19 Di 9		Diyala
FAOS 19 Di 10	MVN 3, 104	Diyala
FAOS 19 Di 11	CT 50, 69	Diyala[132]
***JCS* 26, 7**		Diyala
***JCS* 26, 8**		Ešnunna
***JCS* 28, 227 (NBC 10920)**		Ešnunna
***JCS* 35, 168, 1 (AIA 4)**		Diyala
MAD 1, 270 - 335		Ešnunna
MAD 4, 2		Diyala?[133]
MAD 4, 3		Diyala?
MAD 4, 4		Diyala?
MAD 4, 5		Diyala?
MAD 4, 6		Diyala?
MAD 4, 7		Diyala?
MAD 4, 8		Diyala?
MAD 4, 9		Diyala?
MC 4, 50	OIP 104, 245	Diyala
MC 4, 51		Diyala

[132] B. Foster suggested Umma based on the presence of the personal name *i-ti-er$_3$-ra*. However, the language of the letter strongly supports a northern provenience (Kienast and Volk 1995: 169).
[133] These Louvre texts are formally unprovenienced, but Gelb remarks that the internal museum catalog lists "de Tell Asmar?" for this lot of tablets acquired in 1923, prior to formal excavations by the Oriental Institute (1970a: viii).

MVN 3, 27		Diyala
MVN 3, 38		Diyala
MVN 3, 57	Duplicate of MAD 4, 16	Diyala
MVN 3, 60		Diyala
MVN 3, 65		Diyala
MVN 3, 78		Diyala
MVN 3, 79		Diyala
MVN 3, 80		Diyala
MVN 3, 83		Diyala
MVN 3, 102	*RA* 74, p. 179	Diyala
MVN 3, 111		Diyala
MVN 9, 192		Diyala?
MVN 9, 193		Diyala?
MVN 9, 194		Diyala
OAIC 1-53		Diyala
***OrNS* 51, p. 355**		Ešnunna
***SAKF* 2**		Diyala
***UCP* 9/2, 76**		Diyala?
***UCP* 9/2, 83**		Diyala?
***UCP* 9/2, 89**		Diyala?

Table 10: Unprovenienced "Diyala" Texts

2.4.2. Site Provenience of "Diyala" Corpus

Certain texts can be linked with Ešnunna more securely than others. Generally, the presence of personal names from excavated or secure Ešnunna texts,[134] specific geographic labels known only in provenienced Diyala texts or the use of the deity Tišpak, the city deity of Ešnunna, is invoked as evidence for a tablet's origin at Ešnunna. More specifically, Gelb cites the use of specific vocabulary such as *šibšum* and *kušurrā'im*. However, despite the similarity in the word choice, the orthography of the same term varies between the excavated Ešnunna texts and those subsequently attributed to the site.[135]

[134] Assigning certain personal names to Ešnunna instead of other Diyala sites is an inexact science. Only general observations, such as the popular use of Utu and Mama in personal names at Ešnunna compared to Nārum, Dagan and Suen at Tutub, can be maintained.

[135] This could be due to a number of causes: different scribal traditions, temporal distance between exemplars, register (official vs. vernacular pronunciation or spelling) to name a few obvious choices.

Lexeme	Orthography	Text Witness
šibšum	*ši-ib-ši-im*	MAD 1, 2 (excavated from Ešnunna)
šibšum	*si-ib-su-um*	MAD 1, 35 (excavated from Ešnunna)
šibšum	*si-ib-šum*	MAD 4, 3
šibšum	*si-ib-šum*	MAD 4, 9
kusurrā'im	*ku_8-sur-ra-im*	MAD 1, 179 (excavated from Ešnunna)
kusurrā'im	*ku_8-su_4-ra-im*	MAD 4, 4
kusurrā'im	*ku_8-su-ra-im*	OAIC 4

Table 11: Common Vocabulary Between the Ešnunna and "Diyala" Texts

There are some additional interrelations within this corpus that help assign specific texts to a provenience. The text *AuOr* 9, 5 mentions i-da-dingir šabra e_2 ("chief administrator of the household/majordomo"), who is also mentioned with full title in MAD 1, 322, a text confidently associated with Ešnunna. This has only limited implications for the remainder of the *AuOr* 9 texts, which were purchased by P. B. Ubach in Iraq between 1922-1923 possibly in separate lots (Molina 1991: 137).[136] The text *AuOr* 9, 5 also mentions u-ṣi-um gal-sukkal dingir ("chief sukkal of the deity"), who is present with this same qualifier in *JCS* 28, 227. A sealing was excavated from Ešnunna with his cylinder seal impression: u-ṣi-um gal-sukkal ^{d}tišpak .[137] This demonstrates beyond a reasonable doubt the provenience of these two texts to Ešnunna.

Figure 5: Sealing of Uṣi'um from Ešnunna (after OIP 72, no. 593)

P. Steinkeller has demonstrated the assignment of *OrNS* 51, p. 355 to Ešnunna and that text's close relationship to *AuOr* 9, 4. In a subsequent publication he also illustrated the

[136] The personal names mentioned in the remaining *AuOr* texts correspond more closely with those known from Ešnunna.

[137] OIP 72, no. 593 (As.32:711b). Find spot was given as J 19:48, Houses IVb, which places it in close association with MAD 1, 177-179 and 181. MAD 1, 178 discusses slaughtered animals for the deity Ninbarre, which accords well with the seal of the temple official.

connection between MC 4, 50, *JCS* 26, 8, and MAD 1, 336 through various land sale transactions of Dabālum (1992: 88-89).[138] The internal coherence of these four texts supports an Ešnunna provenience for all four texts given MAD 1, 336's certain origin from the site.

P. Steinkeller's suggestion that various texts published in MVN 3 could be attributed to the Diyala region appears to be based on their linguistic affiliation. Of the fourteen Old Akkadian texts written in the Akkadian language, he posits eleven could potentially be from the Diyala area (1982: 366). This association is almost exclusively based on the appearance of personal names in the MVN 3 texts that are popular in the Diyala region. The duplicate account, MAD 4, 16 possessed no accompanying provenience information in the Louvre catalogue and was left unassigned by Gelb (1970a: xviii).

The Diyala letters collected and published together in FAOS 19 show uneven affiliations with Ešnunna. Among the personal names in several letters are a few instances of co-occurrence with names known only from Ešnunna (e.g. Di 1, Di 2, Di 3, Di 9). In Di 4, B. Kienast and K. Volk speculate that Ilī-dan may be synonymous with the Ilī-dan mentioned in MAD 1, 179 because he

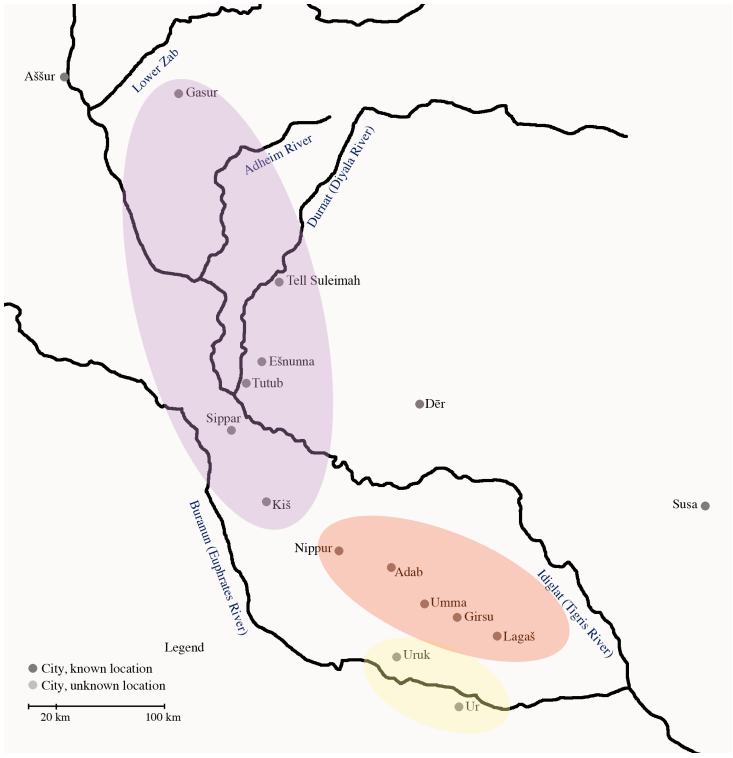

Figure 12: Map of Mesopotamian Linguistic Areas (after OIP 104)

[138] Steinkeller's inclusion of OAIC 2 in this group is problematic, and therefore omitted here, since the personal name is written da-bi-lum, which Gelb claims is a short form of i-da-bi$_2$-i$_3$-li (1955: 192). Furthermore, there are no personal names in OAIC 2 that clarify its origin. In short, the text does not share the internal coherence of the other four texts.

is associated with Tūta-napšum, daughter of Narām-Suen (1995: 159). The letters Di 6 and 7 are part of the lot purchased by the Chicago Natural History Museum and published by Gelb in OAIC. Therefore, their provenience is likely consistent with those of OAIC. The preservation of Di 10 is too fragmentary to offer significant diagnostic features, while Di 11 is ambiguous regarding its assignment within the Diyala region. The text Di 8, based on the same criteria of the co-occurrence of personal names exclusive to a single Diyala site, could be attributed to either Tutub or Ešnunna.[139] Overall, these letters do not bear enough evidence to assign each to a specific Diyala site.

One of the key criteria for categorizing unprovenienced texts, such as those from the Diyala, is the language of the tablet (Akkadian or Sumerian). Generally, it has been observed that the percentage of texts written in Akkadian increases as one moves towards the north. In their detailed study of third-millennium *kudurrus* I. J. Gelb, P. Steinkeller and R. Whiting (1999) identified three general regions within Mesopotamia: the "far south" identified as Ur, Uruk, Larsa and Eridu (yellow); the "near south" comprised of Nippur, Isin, Adab, Šuruppak, Umma and Lagaš/Girsu (orange); the "north" consisting of Akkad;[140] and the Diyala River region and Assyria (purple).

However, relatively concrete quantities have been offered. Below is a tabulation of the language distribution of administrative texts throughout Mesopotamia during the full span of the Akkadian Empire. The genre is restricted to administrative in order to elucidate the top-down interference from Akkadian rulers, especially in areas far from their base. The language of personal letters and possibly legal documents fall outside this public domain generally;

[139] The orthography of the personal name *ri$_2$-ba-tum* in Di 8 compared to the regular spelling *ri-ba-tum* at Ešnunna slightly favors a Tutub orientation.
[140] This label is clearly motivated by the assumption that the capital city of Akkad was located near Kiš, which no longer seems a tenable hypothesis (see Section 1.3.1).

additionally, the royal inscriptions are often motivated by local politics or ideologies that might interfere with the picture presented by the administrative data. Moreover, the uncertain provenience of royal inscriptions, even those in secondary context, prohibits a similar study of that genre at present. The sites are presented according to the geographic categorization put forth by Gelb, Steinkeller and Whiting for the land sale documents (1999: 13). The language of the text was primarily determined by the presence of absence of any Akkadian linguistic elements and secondarily by those features outlined in OIP 104 (Gelb, Steinkeller and Whiting 1991: 11-12). Following the main avenue of inquiry of this dissertation, only Classical Sargonic texts are included in the following table.

Site	Sumerian	Akkadian	Undetermined	Total No. of Texts
North				
Mari	--	--	1	1
Nagar	1 (9%)	10 (91%)	59	70
Urkeš	--	1	24[141]	25
Tell Sweyhat	1 (100%)	--	--	1
Northeast				
Gasur	6 (5%)	119 (95%)	67	192
Tell Suleimah	--	47 (100%)	--	47
Ešnunna	1 (1%)	113 (99%)	96	210
Tutub	1 (2%)	42 (98%)	22	65
Tell Agrab	--	3 (100%)	--	3
Diyala	--	57 (100%)	24	81
East				
Susa	3 (7%)	39 (93%)	55	97
Central				
Sippar	--	12 (100%)	1	13
Abu Jawan	1 (100%)	--	--	1
Kiš	--	35 (100%)	33	68
Kutha	--	2 (100%)	1	3
Nippur	116 (77%)	34 (23%)	82	231
Mugdan (umm el-Jir)	--	29 (100%)	10	39
Sagub	1 (13%)	7 (87%)	5	13

[141] Eight of these 24 texts are Hurrian.

Isin	16 (94%)	1 (6%)	3	20
Zabalam	2 (66%)	1 (33%)	1	4
Adab	333 (89%)	43 (11%)	508	884
Umma[142]	133 (91%)	13 (9%)	162	308
Fara	--	--	1	1
Lagaš	1 (50%)	1 (50%)	--	2
Girsu	239 (70%)	103 (30%)	426	768
South				
Ur	18 (90%)	2 (10%)	26	46
Uruk	--	--	5	5
				3,101

Table 12: Linguistic Affiliation of Mesopotamian Sites during the Old Akkadian Period

This full presentation of the data is peppered with statistically non-significant, albeit potentially interesting, results. To clarify, an abbreviated table is presented below including only the largest corpora.

Site	Sumerian	Akkadian	Unknown	Total No. of Texts
Northeast				
Gasur	6 (5%)	119 (95%)	67	192
Ešnunna	1 (1%)	113 (99%)	96	210
Diyala	--	57 (100%)	24	81
East				
Susa	3 (7%)	39 (93%)	55	97
Central				
Nippur	116 (77%)	34 (23%)	82	231
Adab	333 (89%)	43 (11%)	508	884
Umma	133 (91%)	13 (9%)	162	308
Girsu	239 (70%)	103 (30%)	426	768
				2,771

Table 13: Summary of Linguistic Affiliation Results

[142] This includes unpublished material made available on CDLI.

The administrative data from the Classical sources depicts binary division between north and south; instances of Sumerian in the northern region are rare. The threshold of this boundary remains between Kiš and Nippur and are quite similar to the linguistic distribution observed in OIP 104. However, the area of the "far south" appears to be subsumed into the "near south," but Adab and Umma emerge as cities that retained the highest percentage of Sumerian in their administrative corpus.

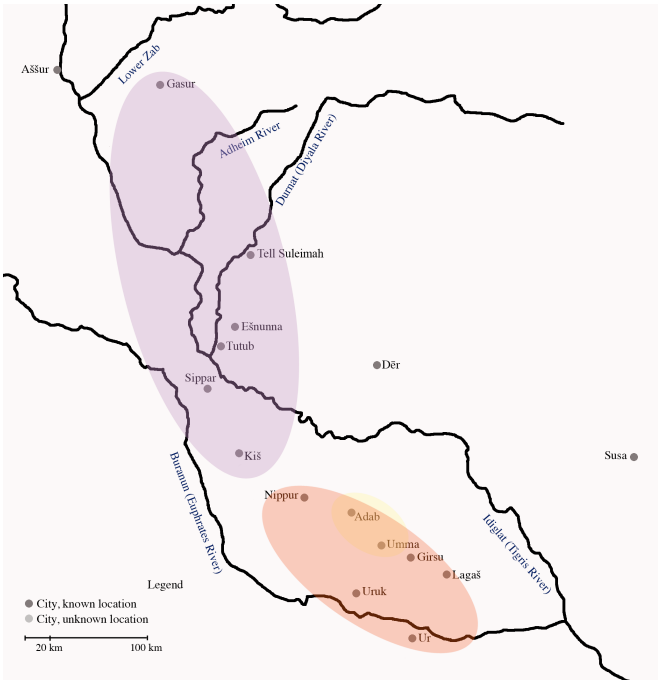

Figure 13: Updated Map of Mesopotamian Linguistic Areas

2.4.3. The Archeological Context of the Core Text Corpus

The find spots of the tablets, as well as internal textual references, indicate that the tablets found at Ešnunna are associated with private residences and the administrative center labeled the Northern Building, while the tablets from Tutub and Tell Agrab were found in soundings that did not have any clearly associated Old Akkadian structures. However, Sommerfeld's re-analysis of the Tutub corpus leads him to claim that the sounding where these texts were discovered was the primary context for the archive and is part of a secular structure, which he generically calls a large household that was possibly (but uncertainly) administered by an $ensi_2$ (1999: 32-33).[143] The small collection of tablets from Tell Suleimah was discovered in a single room of an

[143] Sommerfeld's presentation of the texts divides the archive into three sectors: lists of people, animal accounts, and accounts and listings of different objects. To this are added isolated occurrences of a contract and inspection notes.

administrative structure according to excavators.[144] J. Renger classifies the texts of both Gasur and Tell Suleimah as reflecting "the operations of institutional households that seem to be part of the royal patrimonium" (1995: 281). The exact nature of these "institutional households" is still ambiguous in the literature; however, comparisons can still be made between the Diyala material and corresponding terminologies in the southern, eastern and northwestern corpora (Gelb 1971; Foster 1981).

The tablets included in this study come from four sites near the Diyala River (ancient Turnat). No evidence of unpublished material from these sites has been discovered at present. There are several additional sites that show Old Akkadian levels, but have not (yet) yielded any textual material: Tell ab-Abga', Tell Khallaweh, Tell Sabra, Tell Atiqeh, Ahmed al-Mughir, Tell Dhiba'i, Tell Harmal and Tell Yelkhi (Saporetti 2000).

The history of the human occupation in the Diyala begins in the Ubaid period with small, limited settlements (Adams 1965: 34).[145] These settlements are generally attributed to the later phases of the Ubaid and largely concentrated in the southern zone of the Diyala.[146] The general ecology of the area is well-suited to semi-nomadic populations with its available grazing lands, and access to water with the possibility of small-scale irrigation.

During the succeeding periods, the Diyala followed the same trajectory as its southern counterpart, experiencing significant population growth in the Uruk period and urbanization in

[144] The exact findspot and site map have not yet been made available in published archaeological reports.
[145] Early settlement in the Hamrin region extends further back into the Samarran and Halaf periods. In the later Early Dynastic period the Hamrin and Diyala regions shared cultural affinities with the Deh Luhran plain; however, as E. Carter argues, key material features (burials, figurines, pottery and architecture) link the Hamrin with the piedmont, the Deh Luhran plain and other Elamite regions (1987).
[146] The pottery tradition of the Diyala Ubaid cultures predominantly follows the southern alluvial assemblages.

the Early Dynastic period (39-41).[147] City walls, settlement hierarchies and "palaces" all attest to a period of increasing political, social and economic complexity in the region.[148] The close of the Early Dynastic period witnesses a retraction of the Diyala's previous prosperity with many sites decreasing in size or being abandoned altogether (1965: 39).

The geographic location of the Diyala region is important in any historical period; the valley grants access through the foothills into the Zagros uplands. Near the site of Tell Suleimah is the intersection of two key routes, the Khorassan Road into Iran and beyond and the Kerkuk and Royal Road linking the northern site of Gasur with the major urban center at Susa. This makes the region crucial for trade to the east.

The Old Akkadian period is more difficult to detect in the archaeological remains since the pottery shows a gradual transition from the ED period through to standard Ur III forms. Four new sites are established in the Old Akkadian period outside of modern Baghdad that appear to represent a new outlet from the Diyala River to the Tigris River (1965: 44). Linking this phenomenon with the construction or presence of Akkade can only be speculation at present.

[147] R. M. Adams reconstructs a population of 77,000 based on 200 people/hectare for the 384 hectares of the Diyala (1965: 41). This is about 20% of modern population for the region.
[148] Moreover, Adams calculates that 1,100 km^2 of irrigated land was necessary for subsistence economy (1.4 hectares/person). Given the 1,900 km^2 available in the Diyala and the isolated location of sites, it is likely that not all of the land was utilized during the ED period (1965: 42). Each site would then only require approximately 90 km, yielding a radius around the town of 5 km, much less than the 10-20 km^2 seen in Adams' survey (1965: 41). Additionally, his estimates of water consumption indicate that the ancient Diyala only required one-third of the water resources required in southern Mesopotamia. With this evidence Adams eschews any notions of population pressure as motivating political change.

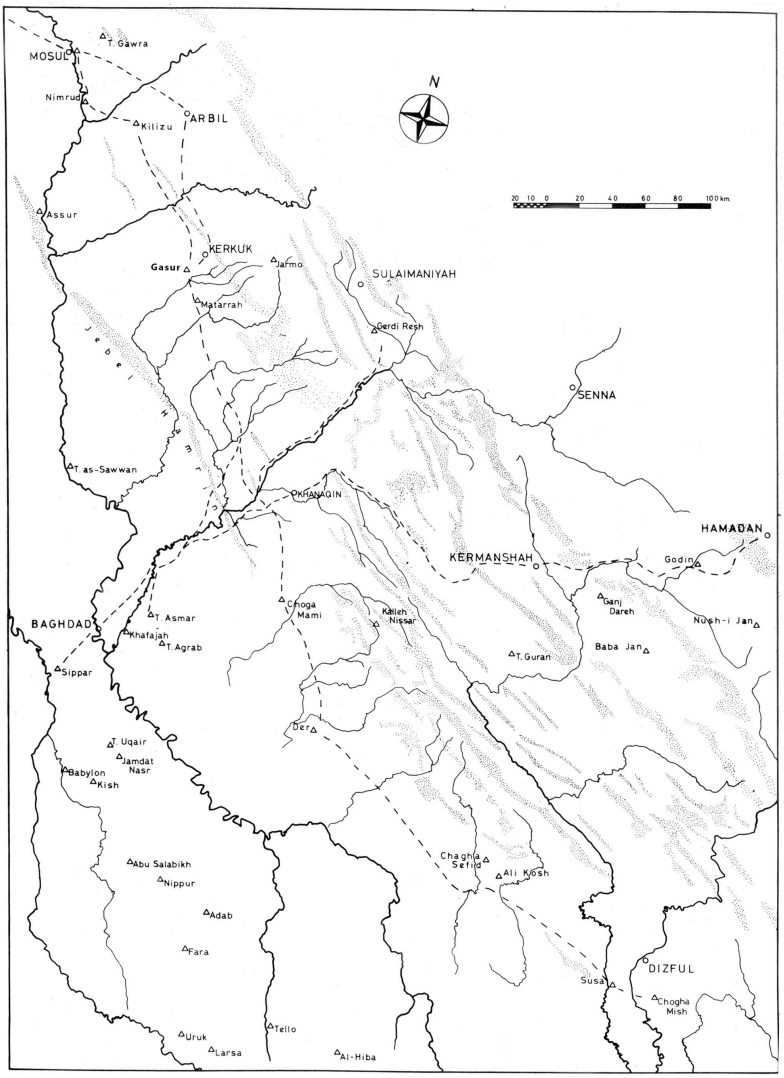

Figure 14: Land Routes Through the Diyala (from Postgate 1979-1981)

2.5. Chapter Summary

This chapter began by outlining a methodology for implementing digital tools into cuneiform research, tailored to address the specific question of universalism in the administration of the Classic period Akkadian Empire. The temporal and geographic parameters of the enormous data set were circumscribed to the non-rebellious cities of the Diyala during the reigns of Narām-Suen and his successor Šar-kali-šarrī. This reduction is necessary in order to avoid

drawing spurious conclusions based on comparisons across the entire 150-year period of the Akkadian Empire.

The agents, specifically office-holding individuals or the offices themselves, types of transactions and their accompanying commodities are the main areas of investigation. In order to guard against misleading results, the data corpus must be cleansed of unnecessary lexical information. For the administrative corpus, this includes the removal of commodity quantities and emendation of nonessential notation used in cuneiform transliteration. This can be supported by the use of the Stop List that will remove a user-determined list of symbols from the Word List.[149] However, it is important to maintain breaks within a text in order to preserve the distances between words, particularly when using the collocation tool, where distance is a crucial part of the statistical measurement. Another method for preventing false impressions from the data is to lemmatize the spelling of words, so that local variations do not prevent the software from recognizing the same underlying lexeme. This is especially useful for personal names and conjugated verbal forms. In conjunction with the lemmatization feature, it is crucial for the researcher to make judgments about the specific readings of the text language. For cuneiform this involved an overall standardization of the corpus, reconciling variant scholarly traditions of transliteration.

The preparation of the data corpus is the most time-consuming step in this process. The user-friendly templates of both AntConcordance and Cytoscape leave only a few decisions to the researcher about how to measure or organize their data and results. Because of the small size of the Old Akkadian corpus in comparison to the larger word banks typically used with such text-mining software, both the I-value, measuring the strength of a correlation, and the T-value,

[149] The Stop List is crucial for the keyness measurements. All partial or broken words should be removed from the corpus, leaving only complete lexemes for this type of analysis.

measuring the validity of a correlation, are utilized. For similar reasons, the log-likelihood algorithm is preferred to the chi-square algorithm for the keyword tool in AntConcordance. The strongest collocates will be selected for deeper analysis, prompting a more detailed reading of the texts in which the target word occurs. The confluence of collocation results can help illuminate here-to-fore unrecognized patterns revealing new insights into the Old Akkadian administrative practices and/or structure.

The SNA adopts a broader purview, bringing together a complex of administrative agents, specifically those bearing office or royal titles. Using both the visual and statistical tools of Cytoscape network hubs, bridges and clusters can be identified. These structural features denote information bottlenecks, decision-making power, social influence or other such qualities. Identifying such influential people within the larger network of the imperial administration will offer an unprecedented view of imperial organization in antiquity.

Chapter Three

3.0. Tell Suleimah

The next four chapters present the core corpus of texts from the Diyala region by site (Tell Suleimah, Tutub, Ešnunna and unexcavated Diyala) each delineated into subsections in order to enhance comparison across sites with a final collocate analysis to assess the accuracy of the text mining tool against manual analysis. Each section begins with a summary of previous research, which is wholly uneven between these three excavated sites. Next, an overview of the local geography is outlined in order to establish both the focus and the limits of the local administration. The geographic horizons of all sites will be considered more fully in the following chapter. Before discussing further details of the textual contents, the text form and layout is examined in conjunction with aberrant features in the local paleography, if any. This is followed by more detailed analysis of the administrative terminology, choices in metrology and prosopographic relationships within the local corpus. Concluding each chapter is a section highlighting the digital tool set; using AntConcordance, an observation culled from the previous section is explored further providing statistical results.

This sketch of the local administrative techniques, practices and tendencies is intended to illuminate any internally consistent features that would unite the Diyala administration during the Old Akkadian period. Either the presence or absence of such uniting features is significant and will reflect on the ability to speak of various regions during the reign of the kings of Akkade. Chapter One outlined some of the cultural and linguistic features that motivate such partitioning of Mesopotamia into Northern, Central or Southern sections. However, whether these areas were distinct within the Akkadian imperial administrative apparatus is unknown. Hence, the study of

the administrative features of one such regional area, the Diyala, in these next four chapters, is a first step towards answering this broader question.

The compendious records capture a segment of Tell Suleimah's socio-economic organization, revealing a sophisticated apparatus. The agents preserved in the corpus are predominantly low-level laborers and mid-level administrators. The principal institution issued barley loans to community members and rations to local workers.[150] Ownership of the surrounding lands was also a concern, deduced from the inclusion of several land sale contracts in this central archive. Textiles, metals and many secondary products are absent from the archive of Tell Suleimah. This overall assessment is built upon a simple word list of the Tell Suleimah corpus, which contains 434 distinct words. Only the twenty-five most common lexemes are presented here in the interest of space and brevity.

Rank	**Raw Frequency**	**Word/Lexeme**	**English Translation**
1	206	še	Barley
2	97	2-UL	Capacity measure
3	96	gur	Capacity measure
4	96	*in*	In
5	64	*šu* (all variants)	Of
6	63	šu-nigin$_2$	Total
7	55	dumu (all variants)	Child
8	37	udu (all varieties)	Sheep
9	29	*a-na*	To/For
10	29	maš$_2$ (all varieties)	Goat
11	29	^{munus}u$_8$	Ewe
12	23	*im-ḫur*	He received it
13	22	|ŠU+LAGAB|	Total
14	19	ziz$_2$	Emmer
15	18	guruš	Laborer
16	18	ur$_5$	Loan
17	15	GAN$_2$	Field
18	14	a-ba-bi^{ki}	Geographic Name
19	13	a-wa-al^{ki}	Geographic Name
20	12	geme$_2$	Female laborer

[150] These two categories of citizens are not always the same.

21	12	gu_4	Oxen
22	12	sar	Field measurement
23	11	mu	Year
24	10	u_3	And
25	9	e_2	House

Table 14: Word List for Tell Suleimah

The purpose of presenting such data is to assess whether the detailed analysis that follows in this chapter supports what is "found" by simple frequency analysis. This will have implications for Chapter Seven where such summaries are used to categorize other Mesopotamian sites. Additionally, in anticipation of the broader analysis in Chapter Seven, the results of collocation searches will be compared with the findings of the traditional, manual microhistorical analysis. This comparison serves to test the validity of such collocation searches for the larger sites presented in Chapter Seven.

3.1. Archeology

Tell Suleimah was excavated by an Iraqi expedition led by S. Rmaidh between the years 1977-1984 as part of a salvage project in the Hamrin basin (al-Sadiya valley). The site is approximately 31 miles (50 km) northeast of Ešnunna on the Diyala River. The region practices rainfall agriculture, which limits the crop production.[151] The tell itself is one of the largest in the valley, suggesting it was the center of the surrounding, smaller settlements. The local terrain formed a secluded valley, which F. Rasheed believed maintained Tell Suleimah's economic and potentially political isolation (1981: 5-6).[152] Many of the geographic toponyms he attributed to local villages dependent on the regional center of Tell Suleimah, which is supported by a lack of cuneiform remains at any other local sites (1981: 13-14). Remains on the site date to the ED III

[151] This accounts for the fact that the majority of texts address animal husbandry with only limited mention of land grants, and then only for high level officials ($ensi_2$ and dubsar). See the brief description given by Dr. M. Sayid in AIHA, where he emphasizes the low quality of agricultural land and the impending presence of "high rocky mounds" (1981).

[152] This terrain also affects the available arable land for crop production.

period continuing through the Old Akkadian period. This is followed by Isin-Larsa levels with no identifiable Ur III levels on the site, similar to other sites in the Hamrin area.

During the 1980 season a group of 47 Sargonic tablets was discovered together in a single room in the southeast area of the site in level IV. The archeological team interpreted the structure that the tablets were found in as some form of administrative office. The corpus of 47 tablets was published in AIHA 4 by Rasheed. The overall layout and paleography suggest a Classical Sargonic date for this collection of tablets.

The identification of the site with ancient Awal was first suggested by Rasheed because of the high frequency of this place name in the text corpus (1981: 10). Additionally, he believes that the location east of the Tigris and the structures of the site match the known level of importance of ancient Awal. The identification is still uncertain since there are other possibilities based on the same textual evidence. The place name a-ba-bi^{ki} is also mentioned regularly in the small corpus, and an inscribed brick bears the name pa-ti-ir^{ki}. However, since this place name is mentioned in relatively low frequency throughout the texts, Rasheed prefers Awal.[153]

The lack of explicit reference to Akkade and her agents can reasonably be attributed to Tell Suleimah's small size in comparison to other excavated sites from the Old Akkadian period.[154] Yet, the site's location near the crossroads of both the east-west (the Khorassan Road) and north-south trade (Kerkuk and Royal roads) routes warranted the Akkadian empire's interest and attention. The geographic location of Tell Suleimah also opens the question of cultural or ethnic affiliation since it was exposed to both Hamrin and Elamite regions. In general Tell

[153] D. Frayne prefers Batiri as the ancient name of Tell Suleimah in his *The Early Dynastic List of Geographic Names* (1992: 56ff and 67ff).
[154] Note the isolated and oblique mention of Akkade qualifying a capacity measure in AIHA 4, 11, which cannot prove direct influence, but connotes some level of imperial impact.

Suleimah is one component of a broader northeastern Semitic area, but some few peculiar features, such as its capacity metrology, suggest an affiliation beyond these borders.

Overall, this modest corpus records the expected aspects of local business: land grants, herd inventories, ration distributions to workers, etc. The cuneiform texts preserve the operations of an agrarian community existing, at least in part, under the aegis of a central authority. Reference to goods transferred outside of their territory is lacking, although there are several individuals marked as being from northern Babylonia proper: a group of three men from Kiš and Puzur-utla from Sippar.[155] In light of this connection with northern Babylonia, the omission of any mention of Ešnunna or Tutub is surprising.

3.2. Previous Scholarship

Previous textual analysis of the corpus of cuneiform tablets from Tell Suleimah has been limited. This is likely due to two general reasons, the first being that the principal edition of the texts was published in Arabic, a language largely inaccessible to international scholars. The second reason is the extremely small corpus involved, only 47 texts. Despite the comparatively few texts, the tablets from Tell Suleimah yield informative details of both retained local praxis and intrusive imperial mandates. As a whole, the archive depicts a polity only marginally affected by the growing imperial reach of the Akkadian kings.

After Rasheed's initial publication of the texts in his *The Ancient Inscriptions in Himrin Area* (1981), R. Dsharakian offered his analysis of the corpus in his "Altakkadische Wirtschaftstexte aus den Archiven von Awal und Gasur (III. Jahrtausend v. Chr.)" (1994). While Dsharakian treated Tell Suleimah and Gasur together in his analysis, he proffers targeted insights into the socio-economic structure of Tell Suleimah during the Old Akkadian period. To begin, he

[155] AIHA 4, 4 and 9.

outlined his categorization of the corpus into eight groups as follows: lists of able-body workers (Sumerian: guruš), the rations (Sumerian: še-ba) associated with this work force, multi-year ration documents, trade goods, field measurements, *ište* PN documents, animal inventories, and a directory. [156]

He reconstructed the ancient household (Sumerian: e_2; Akkadian: *bētum*) as including a residence, apartments, stores, cattle pens, fields, gardens and pastures, inclusive of the corresponding personnel and labor units (1994: 2). Within this household paradigm he delineated the four main households in the region: *bēt* Šū-iltum, *bēt* Pūšu-kēn, *bēt* Šū-rimkum, *bēt* Aḫu-ilum. Within this framework, Dsharakian assigns these households to eponymous ancestors; each of these is reconstructed as a loosely defined family unit, possibly a territorial community (Sumerian: iri; Akkadian: *ālum*) or family business managed by one of the city "elders" (Sumerian: $abba_2$ iri) (1994: 2-3). Additionally, Dsharakian posits an amorphous relationship between these established households and the religious center situated in the middle of the site (1994: 3).

Given the brief treatment by Dsharakian, his analysis is only partial; G. Visicato, perceiving this lacuna, published a more probing discussion of the underlying administrative structures of Tell Suleimah (1999). While he maintained categories of text types, he also incorporated relationships between text categories. His eight categories are delineated as follows: personnel texts,[157] barley loans, small cattle (Sumerian: udu; Akkadian: *immerum*) transactions,

[156] Dsharakian does not assign nos. 10, 11, 30, 32, 38 to a category. No. 38 is likely too broken to assign a clear meaning to with certainty, while no. 32 is a basket tag (Sumerian: pisan dub-ba). As for the remaining three omitted texts, I cannot surmise why they were not included, but according to Dsharakian's assignment scheme nos. 10, 11 and 30 would belong to his multi-year ration documents.
[157] This combines Dsharakian's able-bodied workers (Sumerian: guruš) texts with a subset of the single-issue ration texts. Visicato further subdivides this category into four classes: list of workers, list of individuals, deliveries of grain to individuals, and personnel recruitment (1999: 18).

land purchases, land allocations, livestock inventories,[158] a record of chairs and varia. This categorization scheme departs from that of Dsharakian on several key points, which inherently affects Visicato's subsequent analysis and resulting interpretation of the local administration.

I share Visicato's skepticism of Dsharakian's eponymous ancestor household model (1999: 19, fn. 18).[159] Dsharakian's reasoning seems to be driven by the exclusive use of male names that do not appear in other records, indicating that they were deceased.[160] There is the consideration of administrative level; there are few references to the highest-level personnel, which owners of large estates were likely to be (i.e. janissaries of the current ruler). Therefore, we are missing the stratum of society that was most likely to invoke the lineage associated with ancestral clans. Visicato retains the kinship alignment of the household units, but prefers to see them embedded in a larger institutional household (1999: 23-24). His hypothesized household "was the regional center for recording transactions with grain and managed the agricultural lands cultivated by guruš and géme" (1999: 24). Thus according to Visicato, this household was organized as an institution, owning cattle and hiring workers to cultivate land. He views barley loans as the main transaction of this centralized institution (1999: 24). He speculates that this may have been necessary to support sheep breeders, the predominant subsistence strategy of the region both in antiquity and today (1999: 24).

Both Dsharakian and Visicato begin their interrogation of the data by partitioning a coherent archive into fractional categories. I believe this preliminary step is unnecessary and obscures the consistency and interrelationships of the individual actors. Such methods of

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[158] Again, only a subset of Dsharakian's animal inventory category.
[159] P. Steinkeller assigns only the general label of private household to these entities, omitting any comment on the eponymous ancestor model (1939: 122, fn. 41). The archeological context of the tablets sheds little light on the town's internal organization unfortunately.
[160] However, AIHA 4, 14 names Gaga-azu, son of Pūšu-kēn; if this is *the* Pūšu-kēn of *bēt* Pūšu-kēn, then this single generation negates the idea of an atavistic social organization. This is not certain, but neither is the eponymous ancestor model.

categorization are modern fabrications crafted specifically to aid in our present interpretation, not to reconstruct the organization of the Mesopotamian world. This is not to ignore the clear categorization of people by age or sex (e.g. guruš, geme$_2$, ARAD$_2$ or dumu), but the disaggregation of a coherent archive is simply one methodology for textual analysis. I prefer to avoid categorizing texts based on the type of transaction specifically because the same individual often executed a variety of transaction types throughout his career or lifetime. Instead, I privilege the perspective of the individual in order to focus on the agency underlying the administrative structure. By centering the individual in the analysis, a reconstruction of the administrative network can be achieved through its constituent parts rather than its constituent processes.[161]

3.3. Geography of Tell Suleimah

Before delving into the network of relationships between the various actors in this corpus, it is helpful to first establish basic horizons of the archive, specifically the general geography. There are numerous place names mentioned in this small corpus, many of which are only attested in the Tell Suleimah archive; their location remains ambiguous. Generally, the details of the local geography remain beyond the ken of the modern researcher. However, for more popular geographic toponyms, certain observations can be made.

There appear to be four main places that interact in the Tell Suleimah corpus: Awal, Urik, Ababi and Arak.[162] To a limited extent, the four households correspond to these four main toponyms. The *bēt* Šū-iltum is located in Awal,[163] while *bēt* Aḫu-ilum is mentioned as being in

[161] As Dsharakian admits, with the given corpus we are not able to parse out private, temple or palace sectors discretely (1994: 3).
[162] Awal also appears in texts from Susa and Gasur (MDP 14, 33; HSS 10, 185; HSS 10, 153). While E. Weidner (1932/33) placed Awal at the headwaters of the Diyala and Adheim Rivers, the prominent mention of Awal at Tell Suleimah likely prohibits a location so far away (over 100 km). Rasheed suggests that Tell Suleimah is Awal based on the relatively high frequency of this toponym within the archive.
[163] AIHA 4, 1.

Urik.[164] The remaining two households, *bēt* Pūšu-kēn and *bēt* Šū-rimkum, are elusive in their locale since they do not figure prominently in this corpus.

The work group associated with *bēt* Šū-iltum in Awal includes four draught oxen (Sumerian: gu_4-ĝeš)[165] and four draught equids (Sumerian: anše-ĝeš) to assist with the plowing of the fields. The coincidence of the two records, AIHA 4, 1 and 7, indicates that the archive spans more than one plow season because there are changes to the work group, particularly among the able-bodied workers (Sumerian: guruš; Akkadian: *eṭlum*). However, the time span cannot be too great since Išārum is listed as a child (Sumerian: dumu-nita; Akkadian: *mārum*) in both accounts. It is most probable that these are records from two consecutive plow seasons.

	AIHA 4, 1	**AIHA 4, 7**
guruš (saĝ ^{ĝeš}apin-na)	ir_3-e-um	ir_3-e-um
		i-mi-dingir
		ezen
	a-bu-bu	a-bu-bu
		i-di_3-num_2
		am-mu-zum
	i-nin-num_2	i-nin-la-ba
	$eš_4$-tar_2-la-ba	$eš_4$-tar_2-la-ba
	i_3-li_2-a-ḫi	i_3-li_2-a-ḫi
		wa-ta_2-ru-um nu-$kiri_6$
dumu-nita	i-šar-ru-um	i-šar-ru-um
$geme_2$	$eš_4$-tar_2-ra	$eš_4$-tar_2-ra
	ša-qi_2-tum	ša-qi_2-tum
	a-ḫa-tum	a-ḫa-tum
	da-ga-ga	da-ga-ga
		um-mu-na
	da-ad-lip-tum	da-ad-lip-tum
	iš-mu	iš-mu
	ba-lu-sa	ba-lu-sa
	si-bi-tim	si-bi-tim
	a-ḫa-tum	a-ḫa-tum
		a-bi_2-bi_2 + dumu-nita ga

[164] AIHA 4, 7.
[165] Stol (1995: 177-178; 181; 185-186).

Qualifying statement	*bēt* Šū-iltum *in* Awal	*in* Awal *bēt* Šū-iltum

Table 15: The Household of Šū-iltum in Awal

	AIHA 4, 1	**AIHA 4, 7**
nita	i-zu-gid$_2$	i-zu-gid$_2$
geme$_2$	na-ar-am-tum	na-ra-am-tum
Qualifying statement	*in* Urik	*in* Urik *bēt* Aḫu-ilum

Table 16: The Household of Aḫu-ilum in Urik

The corpus associates itself with northern Mesopotamia through the mention of established place names, such as Kiš, Ereš, Akšak and Sippar. More locally, several toponyms are subsumed under a general identifier; for example, GABA^{ki} includes the sites of Ababi and Urik (see, AIHA 4, 2, 16 and 37), only once extending to Awal as well.[166] The regional toponym Uri has been associated with the northern Akkadian region of Warû (Frankfort, Jacobsen and Preusser 1932: 44). Its use in the Tell Suleimah corpus indicates that it included the places of Arak and Kiš.[167] This is consonant with our current conception of the geographic scope of Warû/Uri (Westenholz 1999: 33). The southern extent of *māti warîm* seems secure at Kiš, plausibly including the city of Sippar as well. However, the northern and eastern reach of this toponym is rather opaque. Despite the local scribe's awareness of potential interaction with Warû/Uri, I cannot ascertain whether Tell Suleimah was in fact part of Warû/Uri.

3.4. Tablet and Script

The tablet shape, format, ductus and paleography are consistent with Old Akkadian style preferences. The archive makes use of the curvilinear form for numeric notations. The paleography of the archive agrees with the Classical Sargonic features; however, there is inconsistency in the use of the ligatured and separate ŠU-LAGAB sequence.[168] The use of the 2-UL *Akkade* metrology would support the conclusion that this archive is Classical in date.

[166] AIHA 4, 37 seems to explicitly exclude Uri and Arak.
[167] AIHA 4, 4 rev. i 11; for Arak alone see, nos. 4, 17, 24, 37.
[168] For example, see AIHA 4, 1 for the use of both forms in the same text.

Equally as important to *when* this archive was written is *where* for determining an appropriate context. Assuming a peripheral location of this site in relationship to the other major Sargonic period centers forces the interpretation away from the paradigm of direct contact with authority. That is not to suggest that this was a benighted backwater incapable of literate sophistication; rather, the rate of change experienced at more central locations would logically entail an expeditious pace of transmission and implementation into practice. Therefore, the rate at which innovations in the official writing system travelled to less important or more distant areas would be reduced or at an uneven pace.[169]

Conversely, if Tell Suleimah were in direct contact with the innovative imperial center, which was issuing standardized forms and administrative norms, then it would be expected that the scribes at the site would be exposed to these emerging, diagnostic Classic features earlier than the more distant southern sites. This is equally as difficult to prove as the first interpretation given the limited data. However, these two competing hypotheses demonstrate the difficulty in assessing textual chronology based on potentially transient or idiosyncratic features. Even with the introduction of novel writing forms, certain entrenched habits would persist, resulting in an overlap of diagnostic features, akin to the pattern evinced in the Tell Suleimah material.

R. Hasselbach (2005: 233) and A. Westenholz (1999: 33) have both identified the broader northeastern region as the seat of linguistic innovation during the Old Akkadian period. Given the probable location of Akkade in this region (see section 1.4.1), the model presents linguistic innovation suffusing from the capital into the Empire's more distant polities. This would indicate that Tell Suleimah adopted new features earlier than the southern states based on geographic proximity. However, this model is predicated upon the continuation of northeastern

[169] This does not necessarily preclude locally motivated changes in paleography, orthography or tablet layout, but the widespread standardization observed at this time suggests that many of the developments were top-down.

Old Akkadian linguistic features into Old Babylonian period Akkadian in a linear fashion, which does not address the dialect of Akkadian spoken in southern Mesopotamia for centuries before the rise of the Akkadian Empire (Westenholz 1999: 33). Are the features identified by Hasselbach linguistic innovations or merely a dialect that through the power of the Akkadian Empire replaced the southern Akkadian dialect?

Therefore, there are two interpretations of the fluctuations in the writing system at Tell Suleimah; one, based on chronology, claims that this archive was written near the watershed between the Pre-Classical and Classical features where certain older forms persisted.[170] The other interpretation assumes regional variation, invoking varied rates of change across the distance from the imperial capital, the seat of innovation. This perspective is devoid of testable chronological determinations.

Technically speaking, the mere presence of Classical Sargonic features places this archive in the Classical period. Yet, the retention of older forms plausibly suggests the earlier part of the Classical period, specifically the first half of the reign of Narām-Suen. Provisionally, I adopt this chronology for the Tell Suleimah material, which is open to revision upon further information.

3.5. Terminology

Many of the phrases and terms utilized in this corpus are standard throughout administrative and Old Akkadian texts. The use of bookkeeping terms such as la_2-ia_3[171] ("hung out," but perhaps in a more nuanced sense "arrears") and zi-ga ("lifted," but more contextually "booked out") are expected vocabulary. The Semitic loanword si-tum (Akkadian: *šittum*,

[170] This interpretation contradicts Visicato's date of early Narām-Suen, specifically pre-Reform (1999: 26).

[171] The reading of the ni sign as ia_3 is based on grammatical parallelism with la_2-ia_3's administrative counterpart zi-ga. Both are rendered as passive, nominalized verbal forms.

"remainder," but in an administrative sense "carried over debt") appears more frequently in northern texts. Additionally, the distribution of šu ba-ti ("he received (it)") is typically seen in southern Mesopotamian texts while its Semitic counterpart *yimḫur* is favored in northeastern corpora. However, the language of the texts does not obscure the underlying continuity and homogeneity in the bookkeeping tradition throughout the entirety of Mesopotamia.

The omnipresent še ur_5-kam ("being of the barley loan") has direct parallels with other Sargonic period texts predominantly concentrated in the north (e.g. Adab, Gasur, Kiš and the Diyala sites):[172]

CUSAS 11, 83 obv. i 2: še ur_5 sukkal-a-kam / Being the barley-loan of the sukkal.
HSS 10, 109 rev. 6-8: *ḫu-bu-lum šu al* zu-zu *i-ba-še$_3$-u$_3$* / The loan that exists upon Zuzu.
MAD 1, 110 obv. 4-5: *ḫu-bu-lam im-ḫu-ru* / They received the loan.
MAD 1, 291 obv. 3-5: *a-na ḫu-bu-lim* du_{10}-a-ḫi *im-ḫur* / Ṭāb-aḫī received for the loan.
MAD 5, 77 rev. 1: še *ḫu-bu-lim* / Barley of the loan.
MAD 4, 71 rev. 8: ur_5-$še_3$ šu ba-ti / He received towards the loan.

The corresponding Akkadian term *ḫubullum* ("loan") is, expectedly, more frequently attested in northern texts where the Akkadian language appears to be preferred over Sumerian.

Specific to the Hamrin corpus is saĝ-*su* (Akkadian: *qaqqadīšu*). This may be an early form of the known Ur III term saĝ-ni$ĝ_2$-gur_{11}-ra-kam ("being the head of the property") (Englund 1990: 30). This term always appears in the context of *maḫārum* ("to receive"; PN *ana qaqqadīšu yimḫur*);[173] maintaining consistency with the reading of the underlying administrative apparatus dictates that saĝ-*su* is an account held by the receivers of the loan. Therefore saĝ-*su* must be a form of debt from the perspective of the recording institution. This supports the interpretation that saĝ-*su* is a forerunner to the more widespread Ur III bookkeeping term.

[172] This is a representative, not exhaustive, list.
[173] AIHA 4, 6 rev. i 6; 19, obv. 8; 21, rev. 2; 22, obv. 6.

In a singular exemplar in this corpus, there are individuals exempted from guruš work, which is typically labor (*bēlū* BAR-*e*[174]). Their status as exempt is made explicit by their omission from the total number of workers in the account, as already noted by Visicato (1999: 18).

AIHA 4, 1	
obv.	
col. 1	
[omitted text]	
12) 1(aš) en-na-lum	12) Ennalum,
13) dub-sar	13) a scribe;
14) 1(aš) šu-gu-bum	14) Šugubum,
15) gal-ug$_3$	15) an official;
16) |PU$_3$.ŠA|-e$_2$-si	16) Puzur-esi,
17) igi nu-tuku	17) a blindman;
18) |ŠU+LAGAB| 3(aš) *be-lu* BAR-*e*	18) total: 3 owners of BAR
[omitted text]	
col. 4	
14) 1(aš) šu-eš$_4$-tar$_2$	14) Eštar,
15) mušen-du$_3$	15) a fowler;
16) 1(aš) da-di$_3$	16) Dadi,
17) nu-kiri$_6$	17) a gardener;
rev.	
col. 1	
blank space	
1) |ŠU+LAGAB| 2(aš) *be-lu* BAR-*e*	1) total: 2 owners of BAR

Moreover, their qualifiers indicate that they are predominantly higher-level officials, skilled workers, or impaired individuals.

Individual	Qualifying Statement	Translation
en-na-lum[175]	dub-sar	scribe
šu-gu-bum	gal-UN	chief assembly man (?)
|PU$_3$.ŠA|-e$_2$-si	igi nu-tuku	blind man
šu-eš$_4$-tar$_2$	mušen-du$_3$	fowler
da-ti	nu-kiri$_6$	gardener

Table 17: Exempt Individuals at Tell Suleimah

[174] I would suggest the possible reading *bēlū aḫie*, meaning "owners of the outside" interpreting BAR as a designation of excess field area. This is paralleled by MAD 5, 3 from Kiš that reads: *be-lu* GAN$_2$ *im-ḫur-ru* / The owners of the field received. This reading would suggest that these individuals were granted land outside of the primary fields most likely owned by the central institution. This further implies that the primary tracts of land were institutionally owned and administered. This is a contextual reading and certainly not definitive. For an Old Babylonian attestation see Lu-Azlag A 277: lu$_2$ bar-ra : *a-ḫu-u$_2$*.

[175] The tallies of AIHA 4, 1 require that Imtalik and Šuni'um, both qualified as scribes (Sumerian: dubsar; Akkadian: *ṭupšarrum*), also be counted as exempt.

However, it is not necessarily the occupation that grants exemption; the gardener Dati is exempt here; however AIHA 4, 7 indicates that the gardener Watārum is not exempt because he is counted among the total of workers who perform field labor. Here the exact mechanism of imperial or local abrogation of an individual's tax status is only hinted at.

Two texts from this small corpus make explicit mention of their accounting apparatus, namely, AIHA 4, 8 and 32. Text no. 32 is a basket tag (Sumerian: pisan dub-ba) for various accounts:

> dub udu Šarbabum u udu Dūrum u dub Wataru
> Tablet: sheep of Šarbabu and sheep of Dūrum and tablet of Watāru.[176]

The relation between distinct texts occurs in several other instances throughout the archive, which is addressed in the following section.

3.6. Metrology

Generally, there is a dearth of metrological vocabulary with time mensuration being completely absent from this archive. Only measures of capacity and land area are extant in the present material from Tell Suleimah. The area metrology is unexceptional in that it follows the established metrology of the period bundling iku (≈ 3,600 sq. m.), $eše_3$ (≈ 21,600 sq. m.) and bur_3 (≈ 64,800 sq. m.). Typical of most Old Akkadian archives, there are competing capacity measures with the imperial 300-$sila_3$ gur (≈ 300 liters).

The interlocking accounts of AIHA 4, 17, 24 and 26 reveal the close association of the documents throughout the entire archive. In conjunction with the repetition of personal names, this association supports the reconstruction of this archive as a coherent collection of local documents over a short period of time.

[176] This individual may possibly be the same Watārum gardener (Sumerian: nu-$kiri_6$), mentioned in AIHA 4, 7.

AIHA 4, 26
obv.
1) 360 la_2 10 še 2-UL
2) ur-^{d}suen
3) še ur_5-kam
4) *in* a-ba-bi^{ki}
rev.
(uninscribed)

AIHA 4, 17
obv.
1) 200 še 2-UL
2) še libir
3) 360 la_2 10 še 2-UL
4) še ur_5-kam
5) *in* a-ba-bi^{ki}
6) 184 1(barig) še 2-UL
7) *in* a_2-ra-ak^{ki}
8) 31 1(barig) še 2-UL
rev.
1) 10 la_2 1 ziz_2 2-UL
2) *in* u_2-ri_2^{ki}
3) še ur_5-kam

AIHA 4, 24
obv.
1) 184 1(barig) še 2-UL
2) *in* a_2-ra-ak^{ki}
3) 31 1(barig) še 2-UL
4) 10 la_2 1 ziz_2 2-UL
5) *in* u_2-ri_2^{ki}
rev.
1) |ŠU+LAGAB| 216 še 2-UL
2) še ur_5-kam

Composite Translation
1) 200 double UL vessels of barley,
2) old barley (left-over debt?)
3) 350 double UL vessels of barley,
4) (of/to) Ur-Suen,
5) being the barley of the loan,
6) in Ababi;
7) 184 1/2 double UL vessels of barley,
8) in Arak;
9) 31 1/2 double UL vessels of barley,
10) 9 double UL vessels of emmer,
11) in Uri;
12) being the barley of the loan.

In this corpus the 2-UL appears in complementary distribution with the gur; grain products are qualified as either še gur or še 2-UL yet are totaled separately.[177] Both are still used for many of the same transaction types: recipients receive grains in either standard, their running accounts are reckoned in either standard, and the multi-year accounts use either standard as well. However, there are some subtle distribution patterns. For example, all purchases (i.e. documents that include a sa_{10}-phrase) are reckoned with the gur. Additionally, the only ration

[177] See AIHA 4, 13 and 37.

text (AIHA 4, 41) is also reckoned in the gur in lieu of the 2-UL. Conversely, many of the barley loans (both debited and credited payments) are recorded in the 2-UL.

The difference between these capacity measures is also quantifiable; the presence of a 4-barig notation in AIHA 4, 42 and 23 in conjunction with the regular gur indicates that this is the larger 300-$sila_3$ gur, which is typically associated with the Akkadian Empire. However, this still leaves unresolved the measurement of the 2-UL vessel.[178] What was the standardized size of the barig implied by the qualifier *Akkade* in AIHA 4, 11? According to A. Salonen, the UL vessel contained 36 $sila_3$each, thus the 2-UL would be equivalent to 72 $sila_3$ (1965: 291-292; 1966: 275). M. A. Powell speculates that this system stems from an older seeding ratio (1989: 497). As it is preserved at Lagaš, the capacity system proceeds as follows:

$$sila_3 \xrightarrow{6} ban_2 \xrightarrow{6} UL \xrightarrow{4} gur$$

This capacity unit was utilized in Pre-Sargonic Girsu/Lagaš where it is qualified explicitly with gur (e.g. BiMes 3, 15, 19 and RIME 1.9.3.5, ex. 2). It was used to measure grains (e.g. Nik 1, 39), onions (e.g. DP 404), bitumen (e.g. DP 344) and animal hides (e.g. HSS 3, 45).

The available evidence from Tell Suleimah suggests that the 2-UL was a smaller unit than the gur and the local measure. I interpret its qualification *Akkade* as suggesting that the local measure had to be regulated against the established vessel sizes in use by the imperial administration. As T. Gomi argues, this was typically done at the barig level, indicating that the adjustment affected the size of the vessel. The arithmetic of AIHA 4, 24 suggests the size of the 2-UL as 120 $sila_3$ (= 2 barig); perhaps it increased from 72 $sila_3$ to 120 $sila_3$.

[178] The notation še gur saĝ-ĝal$_2$ *in* gur UL la$_2$ 2(diš)/ Barley (measured in the) saĝĝal gur according to the UL vessel (containing) less 2 units. MAD 5, 24 does not help illuminate a solution.

AIHA 4, 24

obv.

1) 184 1(barig) še 2-UL

2) *in* a_2-ra-ak^{ki}

3) 31 1(barig) še 2-UL

4) 10 la_2 1 ziz_2 2-UL

5) *in* u_2-ri_2^{ki}

rev.

1) |ŠU+LAGAB| 216 še 2-UL

2) še ur_5-kam

Account calculation for še:

2-UL	barig
184	1
+ 31	1
215	2

If total is 216,
then 2-UL = 2 barig

The exchange rates for animals adduce additional evidence for reconstructing the capacity metrology at Tell Suleimah. The various fungibles are exchanged at a fixed rate, which could be due to several independent factors. For instance, the state, or any central authority, can standardize prices as part of its regulation policy; however, if this archive existed only over a short time span, the archive may not capture natural price fluctuations across several years. Perhaps most informative on this topic is AIHA 4, 5, which demonstrates the prices for several small cattle, as well as the absolute size of the capacity metrology.

The exchange rate for small cattle applies regardless of gender or breed, but not age. The texts do not make mention of the health of the animals, so I assume that all animals mentioned were healthy and productive. The equivalencies of the small cattle and barley indicate a consistent ration of 2 udu (standing for any adult ovicaprid) = 1 še gur. Particularly helpful are the odd numbers of livestock that yield 2 barig 3 ban_2. This measurement maintains consistency only if it is equivalent to 1/2 gur, which has significant implications. The size of the gur utilized here must be the 300-$sila_3$ gur, akin to the royal gur and the synonymous Akkadian gur. These calculations are confirmed by AIHA 4, 12 and 5.

65 udu, u_8 = 32 še gur 2 barig 3 ban_2
40 udu, u_8, $maš_2$ = 20 še gur 2 barig 3 ban_2
6 udu = 3 še gur
33 udu, u_8, $maš_2$ = 16 še gur 2 barig 3 ban_2
14 udu, ud_5, $maš_2$ = 7 še gur
24 udu, u_8, ud_5, $maš_2$ = 12 še gur
15 udu, u_8, ud_5 = 7 še gur 2 barig 3 ban_2

In AIHA 4, 5 a male bull specifically noted as being 2-years old, an age still considered immature by ancient Mesopotamian standards (Stol 1995: 177), is exchanged (Akkadian: *ana*) for 2 1/2 še gur, differing from the steady ratio of 2 udu = 1 še gur.

1 amar-nita 2-diš = 2 še gur 2 barig 3 ban_2

Here the exchange rate deviates from the round numbers described above. This slightly more irregular equation mandates the exchange of 1 pig for ≈ 4/5 še gur (or 1 gur saĝ-ĝal$_2$), or conversely, 1 še gur for ≈ 1 1/4 pigs.

22 $šaḫ_2$ = 18 še gur

However, this rate is contradicted by the calculations in AIHA 4, 34. Here the pigs are folded into the calculations as small cattle, where 30 head of livestock maintains the clean ratio of 2:1.

21 udu, 9 $šaḫ_2$ = 15 še gur

This text also denotes the value of certain metals and vegetal goods. The equations demonstrate that 1 *mina* (≈ .5 kg) of copper is valued at 1/2 še gur (conversely, 1 še gur equals 2 *mina* [≈ 1 kg] of copper). The value in silver is shown to be higher than copper since a single shekel (1/60 *mina*; ≈ 8.33 g/ .0083 kg) is equivalent to 1 1/5 še gur. The value of onions at Tell Suleimah maintains round numbers, similar to the small cattle equivalencies. The equation implies that onions were worth 2 1/2 times that of barley.

1 uruda ma-na = 2 barig 3 ban_2
1 ku_3-babbar gin_2 = 1 še gur 1 barig
1 barig $šum_2$ = 2 barig 3 ban_2 še

In sum, at the ancient site of Tell Suleimah during the Akkadian period, an individual could exchange 1 še gur for 2 head of small cattle, 2 *minas* (≈ 1 kg) of copper, 40% of a young male calf, 120 liters of onions, 1 1/5 pig, or 5/6 of a shekel of silver.[179]

In the tradition of the Maništūšu Obelisk, AIHA 4, 44 records the exchange of land for silver, grain and small cattle. The overall format is congruent with that of the Maništūšu Obelisk; however, the very regular exchange rates of the Maništūšu Obelisk are not as clear at Tell Suleimah. Unfortunately the text is severely damaged, preserving intact only two entries.

AIHA 4, 44	
obv.	obv.
col. 1	col. 1
...	...
7) 10 la_2 1 gin_2 ku_3-babbar	7) 9 shekels of silver,
8) 14 še ⌜gur⌝	8) 14 gur of barley,
blank space	*blank space*
9) [nig_2]-sa_{10} 5 GAN_2	9) purchased item: 5-iku field,
col. 2	col. 2.
1) dingir-ra-bi_2	1) Ilum-rabi
2) *im-ḫur*	2) received.
...	...
rev.	rev.
col. 1	col. 1
1) 1 gin_2 sa_{10} ku_3-babbar	1) 1 shekel purchased silver,
2) 7 udu	2) 7 sheep,
3) nig_2-sa_{10} 1 GAN_2 20 sar	3) purchased item: 1 iku, 20 sar field,
4) [be]-li_2	4) Bēlī
5) *[im]-ḫur*	5) received.
...	

The fixed ratio of 1 shekel (Sumerian: gin_2) silver = 1 iku (≈ 3,600 sq. m.) consistently applied throughout the Maništūšu Obelisk is not readily detectable here (Steinkeller 1999: 556). The second entry records one shekel of silver and seven sheep, which, according to previously established equivalencies, equals 4.5 shekels of silver per 1.2 iku of land yielding a ratio of 3.75

[179] This departs slightly from Visicato's schematic (1999: 22, fn. 34).

shekels per iku. The first entry is slightly more difficult since additional evidence for the exchange rate between barley and silver at Tell Suleimah is lacking.

3.7. Prosopography

Many of the personal names mentioned in this archive occur only once, frustrating attempts at prosopographic reconstructions. However, some few prominent individuals figure into several accounts allowing for limited reconstruction of the extent and limits of certain offices and elites. The co-occurrence of the same appellations, albeit without patronyms, in AIHA 4, 41, explicitly a ration text (Sumerian: še-ba guruš) and AIHA 4, 42, a land sale contract, challenges the view that the clear dichotomy between land owners and land workers observed at Gasur is applicable at Tell Suleimah (Foster 1987b).[180] In the ration text, Šū-Eštar, Lagibu and Ilum-damiq receive barley allocations from the central institution for a duration of seven months.[181]

Ilum-damiq appears in two separate land sale contracts as purchasing plots from individuals (*ana* nig_2-sa_{10} *iddin* / He gave for an exchanged/purchased item). In Batiri, the only known location of any of his purchased plots, both Šū-Eštar and Lagibu receive barley in exchange for an undisclosed amount of property. Given the inherent problems of parsing out individuals from a network of repeated or popular names, it could be argued that these are not the same set of individuals. However, given the confined parameters of this archive and the

[180] Visicato also puzzles over the practice of ration receivers acquiring barley loans, but draws upon a parallel practice at Old Babylonian Ḫafajah (1999: 25). B. Foster's own dichotomy between landowners and ration recipients is rather tenuous, "the best-attested land holders and seed recipients do not appear in the ration lists; moreover, some of the apparent coincidence of names may well be haplonomy" (1987b: 100). His concession that there are in fact identical names undermines the strength of his position, but without clear patronyms neither interpretation (land owners as ration recipients or land owners as outside the ration system) is substantiated.

[181] See also MAD 1, 87+118 for Visicato's reconstruction, *šu* 7 [iti], meaning "a period of seven months for which the workers were rationed" (1997: 245).

association of these three names, it seems possible that these are the same individuals and that landholders do receive rations from the central institution during part of the year.[182]

The classic Mesopotamian social strata are detected at Tell Suleimah, with a hierarchy extending from governor (Sumerian: $ensi_2$) to slave (Sumerian: $ARAD_2$). Suspiciously absent from the list of personnel in this pastoral region are the shepherds (Sumerian: sipa; Akkadian: *rē'ûm*) despite the regular appearances of ovicaprids in the accounts and the historically established local ecology. There is only limited evidence for secondary activities associated with herding, such as dairy or textile production.[183]

As mentioned above, the current economy of the region tends towards pastoralism. This continuity is witnessed in the exchange documents that seem to indicate ovicaprids were the local commodity traded for needed grains and land. This inclination has been retrojected into the early history of the region by modern scholars, with sound logic I believe since the general ecology and environment remain relatively constant (Wahida 2002). The resounding silence from the records on this point could denote an archive focused on specific sectors of the economy: land and its crops. Since it is probable that the recovered 47 tablets are only a fraction of the original archive it is indeterminable to speculate on the overall economy of the city at Tell Suleimah.

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[182] P. Steinkeller concludes that they are the same individual as well in his analysis (1993: 122, fn. 41). More problematic is the repetition of Ilī-aḫi, where he is the owner of 4 bur 4 iku 43 1/3 sar *in* Ilili in AIHA 4, 47. The Ilī-aḫi in the worker texts (AIHA 4, nos. 1 and 7) is ambiguous. However, in AIHA 4, 20 he receives 5 še 2-UL 1 barig and is qualified as *šū* ^{ĝeš}gi (Akkadian: *apum*; see also AIHA 4, 22). Whether this is a personal name or merely the concrete noun "thicket" is unclear. However, the presence of ^{ĝeš}gi among the property of Ilī-aḫi in Ilili is suggestive that this is the same person in these two texts. This correlation would again undermine the paradigm established at Gasur that landowners did not receive barley allotments.

[183] AIHA 4, 41 obv. 8: še *a-na* udu ur_4-ra / Barley for the shorn sheep.

3.8. Collocation

The frequency list presented at the beginning of this chapter reflects very accurately the major elements of the Tell Suleimah archive. As described by both Dsharakian and Visicato, workers (Sumerian: guruš, geme$_2$), grains (še, ziz$_2$, gur, 2-UL) and animals (udu, maš$_2$, gu$_4$, u$_8$) are a primary component of this archive. Moreover, the word frequencies detected the presence of land documents (GAN$_2$, sar) and the loan documents identified by the previous researchers as well as the importance of the household structure (Sumerian: e$_2$). Overall, the presence of Semitic lexemes (*in*, *šu*, *a-na*, *im-ḫur*) reflects the linguistic character of Tell Suleimah, being so geographically removed from the Sumerian south.

The collocation searches were run to assess if this technology accurately reflects the more detailed work of manual analysis. The potential list of collocate search terms is lengthy; therefore, specific lexemes were strategically chosen to test particular findings of the preceding study of the Tell Suleimah material. The majority of the results involved the capacity metrology, summarized as follows. The non-descript gur was used for the same variety of commodities as the smaller 2-UL; however, certain transactions tended towards one over the other. For example, the sale texts (Sumerian: sa$_{10}$) showed a proclivity for the gur, while conversely the loan texts (Sumerian: ur$_5$) demonstrated a partiality to the 2-UL measure. So, was this reflected in the collocate data?

Indeed it was. The statistical results are presented in the following table.[184]

[184] To reiterate the parameters of statistical significance discussed in Chapter Two, those terms with a Mutual Information Score higher than three and a T-score higher than 2 generally demonstrate interesting results. The Mutual Information Score demonstrates the strength of the correlation between the search term and the collocate lexeme; the T-score measures the degree of certainty that the correlation is genuine. Taken together these scores reflect the terms most likely to co-occur with the search term in a meaningful way.

Collocate	MI Score	T-Score
a-ba-bi^{ki}	*5.6*[185]	*2.4*
še	*3.7*	*4.5*
2-UL	*3.7*	*3.1*
gur	2.5	1.9

Table 18: Collocates for ur_5 ("loan") at Tell Suleimah

Collocate	MI Score	T-Score
udu	*5.8*	*2.0*
še	*3.6*	*2.0*
gur	*4.7*	*2.1*

Table 19: Collocates for sa_{10} ("exchange") at Tell Suleimah

These measurements confirm the observation that exchanges were evaluated using the gur and loans, while not exclusively rendered with the 2-UL capacity unit, did heavily favor that standard.[186] This is further confirmed by the collocates for the 2-UL and gur respectively.

Collocate	MI Score	T-Score
še	*4.1*	*12.5*
ziz_2	*4.0*	*3.6*
ur_5	*3.7*	*3.1*
sa_{10}	--	--
gur	.07	0.1

Table 20: Collocates for 2-UL at Tell Suleimah

Collocate	MI Score	T-Score
še	*4.0*	*12.1*
sa_{10}	*4.7*	*2.1*
ziz_2	*4.6*	*4.6*
ur_5	2.6	1.9
2-UL	.07	0.1

Table 21: Collocates for gur at Tell Suleimah

These results neatly summarize the previous observation by demonstrating that each capacity unit was used to measure similar commodities, but used in different types of transactions. Overall, this inspires confidence in the digital tool set, but the precision of results must also be tested at Tutub, Ešnunna and the unprovenienced Diyala texts as well.

[185] Throughout this dissertation, results that exceed the minimum MI-value of 3 and T-score of 2 will be italicized to emphasize their statistical significance.

[186] The observation about exchanges extended also to nig_2-sa_{10} ("exchange good"), which only appears with the gur.

3.9. Chapter Summary

The ancient city at Tell Suleimah was situated at the crossroads of crucial economic trading pathways, but appears to have limited direct interaction with the growing Akkadian Empire. Moreover, there is no mention of the well-known cities of Tutub and Ešnunna, which lie between Tell Suleimah and the northern Babylonian cities of Kiš, Ereš, Akšak and Sippar. Overall, the local administration's use of loans, the 300-$sila_3$ gur metrology and Akkadian language fits well with the features of other northern cities at this time. Local peculiarities, such as the 2-UL vessel and its dedicated use with loans, reveal the unique personalities of individual sites under the monolithic title of the Akkadian Empire.

The collocation tool helped to demonstrate an interesting complementary distribution of metrology units in relation to specific transactions types. The unqualified gur is used with loans while the 2-UL measure is utilized with purchases and some few loans. The underlying motivation for such practices remains speculative at present, but does suggest that Tell Suleimah had a developed administrative apparatus with internal coherency and organization.

Chapter Four

4.0. Tutub

The ancient city of Tutub (modern Ḫafajah) was excavated in the 1930s by a team of archeologists from the University of Chicago. They unearthed both religious and secular buildings at the site: the Temple Oval, the Suen Temple (strata X), the Nintu Temple, a series of private houses, an "Akkadian" building and the city wall. However, the Old Akkadian texts were not found in clear archeological context instead being excavated from a sounding at the northern end of the site.

These administrative texts contain 540 discrete words. Of those, the twenty-five most common are presented below.

Rank	Raw Frequency	Word/Lexeme	English Translation
1	135	dumu (all variants)	Child
2	123	PAP	--
3	116	udu (all varieties)	Sheep
4	90	$maš_2$ (all varieties)	Goat
5	88	šu (all variants)	Of
6	38	guruš	Male laborer
7	23	gu_4 (all varieties)	Oxen
8	18	anše (all varieties)	Onager
9	18	ugula	Overseer
10	18	zu-zu	Personal name
11	17	dam	Wife
12	17	ma-na	~ 500g weight
13	16	ga	Milk/cheese
14	16	šu-i_3-li_2-su	Personal name
15	14	še	Barley
16	14	u_3	And
17	13	^{d}suen-e_2	Personal name
18	13	|ŠU+LAGAB|	Total
19	12	maškim	Royal official
20	11	*a-na*	To/for
21	11	gur	Capacity measure
22	11	i_3-lu-lu	Personal name
23	10	sipa	Shepherd
24	10	šudul	Weapon

25	9	bi_2-bi_2	Personal name

Table 22: Word List for Tutub

These accounts are inundated with mention of all variety of workers recorded by personal name, but tabulated by familial connections (dumu, guruš, ugula, dam). The primary commodity is animal herds (udu, $maš_2$, gu_4, anše, sipa), while the mention of grains, rations and seed are uncharacteristically infrequent. The incidence of personal names in this frequency list is due to homonymy, with several distinct individuals in the Tutub corpus bearing the same name, but with distinct patronymics or occupational title.[187]

4.1. Archeology

The ancient site of Tutub was excavated as part of the Oriental Institute's Diyala campaign between the years 1930-1937. The first campaign was under the direction of C. Preusser and all subsequent excavations under P. Delougaz with T. Jacobsen acting as epigrapher throughout. Two additional campaigns were undertaken by a joint expedition of the University of Pennsylvania and the American Schools of Oriental Research in 1937-1938, also directed by P. Delougaz.

The site of Tutub is located on the Diyala River approximately 10 miles (15 km) east of Baghdad and 12 miles (20 km) southwest of Ešnunna. Tutub is comprised of four mounds, each corresponding roughly to an occupation phase. Mound A is the only mound with Old Akkadian levels and was continuously occupied from the Uruk period until the end of the Old Akkadian period, similar to the occupation pattern of the northwest area of Ešnunna.

During the 1931/32 excavation season, fragments of a Rīmuš vase were discovered in the gate area of the Temple Oval. In the following season (1932/33) destroyed fragments of Old Akkadian tablets were found in private houses. The major cache of tablets was uncovered in

[187] For example: zu-zu dumu i_3-la-ak-ku-ru-ub; zu-zu dumu su-la_2-um; zu-zu dumu qa_2-$aš_2$-du-bala; and šu-i_3-li_2-su engar; šu-i_3-li_2-su sipa.

Sounding H (squares y 24 – x 24) in the northwest area of Mound A during the 1934/35 and 1935/36 seasons. Additionally, five royal inscriptions that belong to the Old Akkadian period were found in level III of the Temple Oval. The tablets collected in Sounding H were published in MAD 1 (nos. 196-260). A small group of tablets dating to the Pre-Sargonic period were found 170 meters away from the main cache and also published in MAD 1 (nos. 260-264). Because of their early date these five tablets were excluded from W. Sommerfeld's republishing of the Old Akkadian corpus in his IMGULA 3/1. This corpus of administrative texts dates to the reign of Narām-Suen based on the year names in certain texts.

Publication No.	Find Spot	Associated Structure	Excavation No.
MAD 1, 260-264	E 29:3	Akkadian Building	Kh. VI T.1-5
MAD 1, 265-266	Sounding H, x 24:1	unknown	Kh. VI T. 6-7
MAD 1, 196-259	Sounding H, y 24	unknown	Kh. V T. 1-64

Table 23: Findspots of Tutub Texts

The modest corpus of tablets excavated from Tutub in the 1930s by the Oriental Institute depicts an urban center organized under a central household. The texts record the variety of personnel required to operate and manage a large, urban institution. The archive associated with this institution possesses peculiar idiosyncrasies in tablet layout and script. Whether this was a period of innovation, experimentation or genuine unfamiliarity with long-established Mesopotamian practices is difficult to ascertain.

The royal family maintained a presence in the city of Tutub through Nabī-ulmaš's post as governor and through the maintenance of property attributed to Bin-kali-šarrī, both sons of Narām-Suen. The extent of their land holdings are not detailed in this small corpus, but the Akkadian kings must have exerted influence over aspects of the urban management given their presence and position. Renewed excavations at the site will likely reveal additional texts that will add to the understanding of the Old Akkadian city and the imperial nuances.

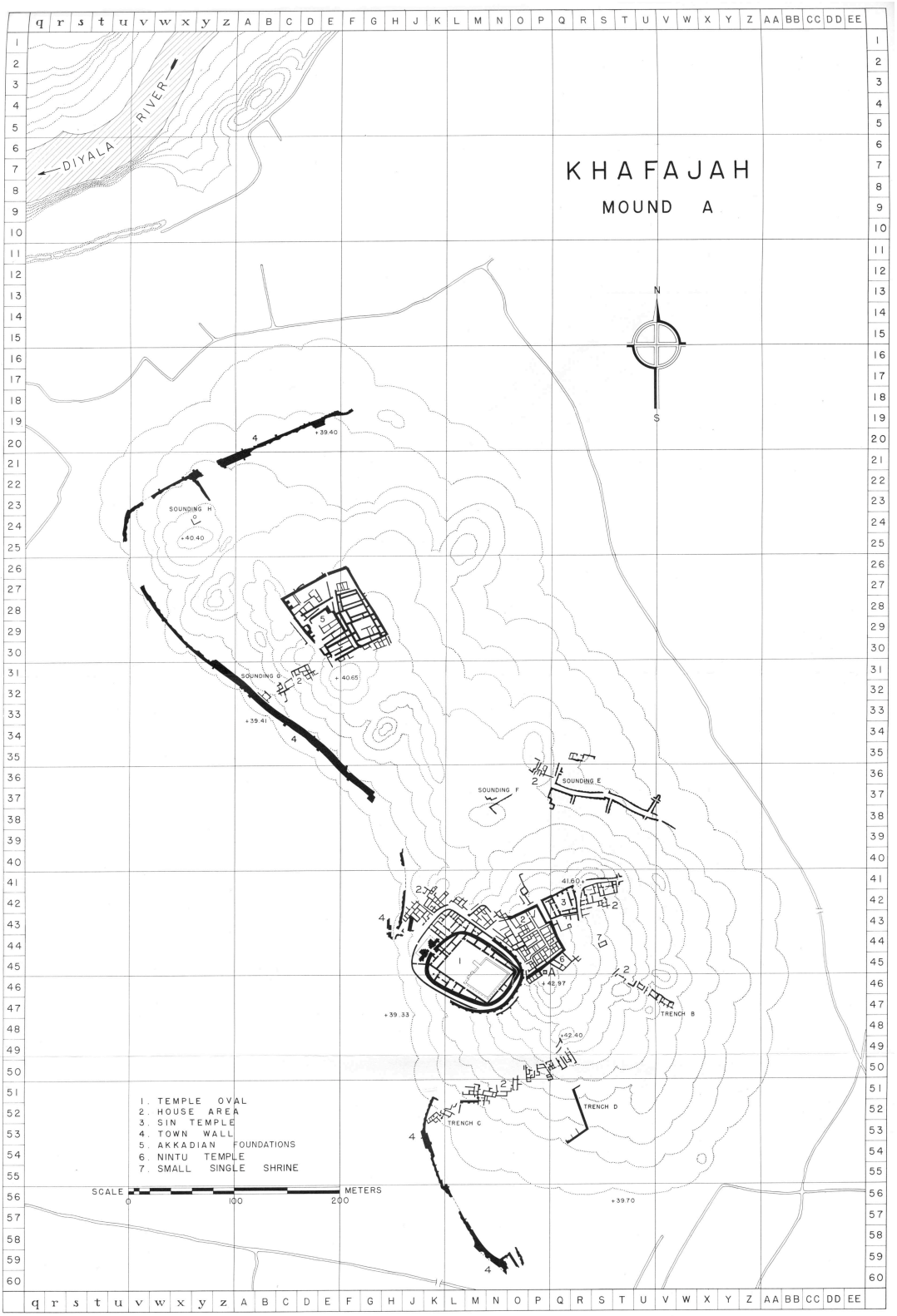

Figure 15: Ḫafajah Excavation Map (from OIP 88, plate 1)

4.2. Previous Scholarship

The texts excavated from Ḫafajah were originally published by I. J. Gelb in his *Sargonic Texts from the Diyala* (1952).[188] The excavated texts were divided between the Oriental Institute in Chicago and the National Museum in Baghdad.[189] His *editio princeps* included 71 textual artifacts, however, the location of part of the collection in the National Museum prevented a full transliteration of 18 texts. Additionally, he had difficulty presenting the information inscribed on the tablets due to their poor treatment by the Ḫafajah archeology team. The purpose of his publication, however, was never to offer a comprehensive overview of the Diyala texts.

W. Sommerfeld's subsequent work with the corpus, both in Baghdad and Chicago, has resulted in improved readings and comprehension. His own publication, *Die Texte der Akkade-Zeit 1, Das Diyala-Gebiet: Tutub* (1999), omitted five tablets published by Gelb (MAD 1, 260-264) based on their Pre-Sargonic origin. This omission is maintained here as well.

Sommerfeld's treatment of the Tutub corpus is thorough and detailed. He masterfully addresses the orthography and paleography of the corpus. Through his palaeographic analysis he introduces a new line of inquiry by outlining three distinct ductus styles present within the archive (1999: 7-17).

Ductus I	Tutub 9,[190] 16-17, 20, 24, 28-29, 31, 33, 34, 37-40, 43, 52, 54, 60-61, 65
Ductus II	Tutub 2-3, 5-10, 12-15, 18, 21, 23-28, 30, 32, 35-36, 41-42, 44-45, 49-50, 53, 55-59, 62-65
Ductus III	Tutub 1, 4, 11, 19, 22, 46-48, 51

Table 24: Tablets by Ductus Type at Tutub

The three-tier ductus categories preserve a simplified style (Ductus I), a "normal" style (Ductus II) and a calligraphic style (Ductus III); he finds that scribes deviate from the "normal" by either

[188] MAD 1, 196-266.
[189] Each institution received 33 tablets from the excavated 66 administrative artifacts.
[190] Some texts are listed in two categories because of their incorporation of multiple styles. The seal, Tutub 66, is omitted since the stone materials are not directly comparable to the clay and stylus ductus.

simplifying their script or complicating their sign forms (never oscillating between simple and complex). Furthermore, the simplified Ductus I is linked with simpler orthographic conventions (e.g. abbreviations, omitted determinatives), but a more flexible syllabary (1999: 11). Not surprisingly, this category of ductus is associated with "eine ungegliederte Abfolge von Buchungsvorgängen." Overall, Sommerfeld finds that the closest correlating factor for ductus choice is the function of the text; however, the small size of the Tutub corpus makes this hypothesis provisional (1999: 12).[191]

The find spot and internal content of the texts led Sommerfeld to posit that these Old Akkadian tablets were likely in their primary location, and certainly part of one coherent archive (1999: 30). However, he remains uncertain of the overall duration of the archive and the socio-economic context. While he suggests this archive is from a "Wirtschaftseinheit,"[192] he cannot confidently posit a governor (Sumerian: ensi_2; Akkadian: *iššiakkum*) as the head of the Tutub administration (1999: 32-33).

Sommerfeld briefly compares the Tutub archive with those from other regions in an effort to illumine local and regional peculiarities. He finds that there is limited co-occurrence of unique individuals in the Diyala and Hamrin area evincing a local purview in the Tutub archive. Ties with Northern Babylonia at-large are inferred from the presence of the royal family at Tutub and a few established geographic toponyms. In southern Sumer there is virtually no link to Tutub except for a single votive inscription on a stone plaque from Girsu (RIME 2.1.4.54):

[191] A similar conclusion was reached by B. Foster in his study of the umm el-Jir archive, where he found "shape and fineness seem to be related to their level of accountability" (1982d: 35).
[192] This term is purposefully chosen by Sommerfeld to avoid the modern connotations of "Hauswirtschaft."

1) dumu ^{d}na-ra-am-^{d}suen	1) Son of Narām-Suen,
2) *da-nim*	2) strong one,
3) na-bi$_2$-ul$_3$-maš	3) Nabī-ulmaš,
4) ensi$_2$	4) governor
5) tu-tu^{ki}	5) of Tutub;
6) li-pu-uš-i-a-um	6) Līpuš-iā'um,
7) balag-di	7) the musician
8) ^{d}suen	8) of Suen,
9) dumu-munus-*su*$_2$	9) is his daughter.

Sommerfeld's presentation of the archive partitions the collection into six content-based categories as follows: lists of people (Tutub 1-21),[193] animal accounts (22-45), accounts and inventories of various items (46-63), a contract (64), an inspection note (65) and a seal (66). His choice was motivated by a desire to understand the function of the texts, especially as they relate to his study on ductus, mentioned above. This categorization based on transaction content, maintained here, is similar to that of Dsharakian and Visicato's work at Tell Suleimah.

Gelb's original publication of this archive, and ensuing ground-breaking work on the Old Akkadian language, were foundational for all subsequent research. Sommerfeld's keen abilities in sedulous study of paleographical details have opened entirely new avenues of research. The aim of the current analysis is to take the improved data generated by Sommerfeld and begin to discuss the implications of hierarchies and organization portrayed in the texts.

4.3. Geography

This archive rarely mentions its own city;[194] indeed, the texts do not mention many geographic place names in general. This was likely due to either a clearly implicit understanding

[193] Sommerfeld further subdivides his category of personnel management (*Personalverwaltung*) into those texts that provide identifying information through family membership (1-7), through occupation (8-18), and those texts that offer no qualifying information for the individual (19-21). It is difficult to assess whether the inclusion of familial affiliation was purposeful or haphazard; if it is assumed to be purposeful, then there is meaning behind Sommerfeld's categorization of the *Personalverwaltung* texts.

[194] Tutub 65: Nabī-ulmaš *in Tutu ibri* / Nabī-ulmaš inspected (them) in Tutu(b). Nabī-ulmaš is the governor of Tutub and brother of both Bin-kali-šarrī and Šar-kali-šarrī. For the orthography of Tutub cf. OIP 104, 44. The spelling *tu-tu-ub* becomes more prevalent during the Ur III period.

of the ancient scribes and bureaucracy of the intended geographic scope of the tablets (especially given the abbreviated nature of administrative texts), or a circumscribed geographic horizon. There are sporadic references to Tutub's urban neighbor, Ešnunna,[195] and cities of northern Mesopotamia, Keš, Namzim[196] and Akšak. This constellation of citations betrays a distinctly northern purview of the local bureaucracy.

References to Akkade are mostly indirect through the 300-sila$_3$ gur (Tutub 46 and 49), however, the mention Agade's the sun deity Utu in Tutub 33 demonstrates that the city did send small cattle to the imperial center. The texts neither directly indicate shipments to or from Akkade itself, nor the presence of personnel travelling between Tutub and the imperial capital. There is a clear presence of known royal family members at Tutub, which may affect its relationship with the capital. Perhaps, *in lieu* of shipping resources directly to the capital, they were retained locally to support royal family members living there.

The preserved year names are not only helpful for dating the unified archive, but also for establishing geographic horizons:[197]

> *in* 1 mu *Narām-Suen* nagab idigna *u* buranun *ikšudu u* šudul Šenamindā *išāru* /
> In the (one) year that Narām-Suen reached the source of the Tigris and Euphrates and conquered Šenamindā.[198] (Tutub 22 and 46)
>
> *in* 1 mu *Narām-Suen* šudul Simurrim *in* Kirašeniwe *išāru u Baba* ensi Simurrim dub-ul ensi Arame *ikmiu* /

[195] An intriguing connection is the presence of Salim-aḫu of Ešnunna (Tutub 28), who may be the same individual listed as a run-away from Ešnunna (MAD 5, 19). More prosaic connections between the two cities include a land sale kudurru from Ešnunna (OIP 104, 44l) that lists *Aši-ālī, mār Gīšum, mār Bēlī-šadû,* ensi *Tutub* / "Aši-ālī, son of Gīšum, son of Bēlī-šadû, governor of Tutub" in a broken context, and MAD 4, 6 that is a brief account of še *šu* Tutu(b) / Grain of Tutub.

[196] According to F. R. Kraus this site lies on the Irnina canal south of Sippar (1955: 59). Conversely, W. F. Leemans places the site north of Baghdad, therefore north of Sippar (1960: 171).

[197] Tutub 23 is too fragmentary to reconstruct, but appears to be a distinct year name.

[198] Possibly related to Narām-Suen's conquest of this city is the pisan dub-ba record from Classical Sargonic Girsu that records pisan saĝ gub-ba še$_3$-nam-in-da-a^{ki} / Basket: Slaves stationed in Šenamindā (ITT 2, 4690).

> In the (one) year that Narām-Suen conquered Simurrum in Kirašeniwe and bound Baba, the governor of Simurrim, and Dubul, the governor of Arame. (Tutub 50 and 65)

This is not cited to claim that citizens of Tutub had direct contact with these cities, but rather that through Narām-Suen's conquests they at least became aware of these regions, which may serve as a precursor to establishing trade and exchange.[199] As noted in Chapter One (section 1.1.2.1.1. under "The Reforms of Narām-Suen"), there are indications that the paleographic changes that mark a period of standardization and consolidation appear before his conquest of Simurrum and Arame. This would place the archive within the traditional Classical Sargonic period.

4.4. Tablet and Script

With rare exception, the format of the tablets from Tutub is typical for Old Akkadian accounting practices. Smaller, rectangular, single-column texts with the diagnostic loss of the round edges from the Early Dynastic period abound. There are only a few exemplars of the larger, multi-column tablets, which are generally more common at the larger urban centers of Mesopotamia.

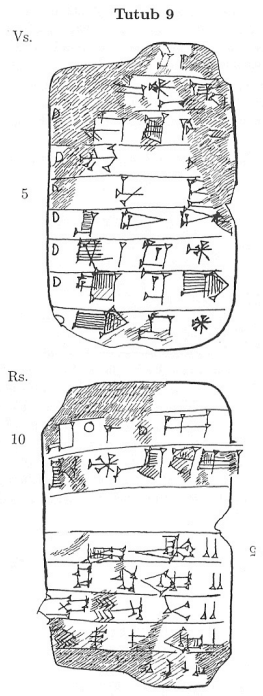

Figure 16: Tutub 9 (from W. Sommerfeld 1999)

The peculiar layout of Tutub 9 defies ready explanation. The reverse contains the concluding section of a brief account of workers followed by an inverted section detailing small amounts of foodstuffs. This is reminiscent of AIHA 4, 14, which notes, "70 liters for the equids," after the regular account. While this section in Tutub 9 likely records travel expenses independent of rations for the workers, its inverted format is not well understood or

[199] Note Tutub 48, which is a distribution of booty (Sumerian: nam-ra-ak; Akkadian: *šallatum*) possibly won by citizens of Tutub under one of Narām-Suen's campaigns.

widely paralleled in the Old Akkadian corpus.[200] There is no indication in the clay that this inverted section was inscribed after the tablet had begun to dry, therefore it is reasonable to conclude that this addendum was written in tandem with the main account.

4.5. Terminology

Many of the texts in the Tutub archive record inventories of workers, animals and goods without qualifying accounting terminology. These texts are simple tallies of a set quantity of commodities with no information regarding their location, transfer, or ultimate ownership. While the *Personalverwaltung* texts (Tutub 1-21) are lacking in accounting terminology, the remainder of the texts offer limited attestations of established and common bookkeeping practices.

Various types of transactions can be reconstructed from both the Akkadian and Sumerian terms embedded in the texts. In Tutub 44 and 45, various animal products are received (Akkadian: *yimḫur*) by individuals.[201] Paired with this is Tutub 22 that demonstrates that the various goods listed were with (Akkadian: *ište* PN *yibašše*) the named individual. Additionally, Tutub 53 records goods that are given over to another person (Akkadian: PN *ana* PN *yiddin*). The movement of commodities is also preserved in a series of delivery texts that record small cattle consignments from various herd personnel (Tutub 25-28, 30-33). Only when paired with a prosopographical element do these cues impart meaning to the administrative apparatus, specifically the activity of the central institution, private individuals and their potential intersection(s). Unfortunately, no unequivocal prosopographical links can be established between

[200] Inverted orientations are also seen in FAOS 19 Di 8, OAIC 26, 42, 48, MCS 9, 255, 256 and 273 and *AfO* 31, 1. All identified examples of this writing phenomenon are isolated to the Diyala and Umma. Either more examples will be found in other sites, such as Girsu, Nippur or Adab, or there was a close connection between the scribal traditions of Umma and the Diyala.

[201] The context of *yimḫurā* is too broken to securely reconstruct the full context of the sale contract in Tutub 64.

the individuals named in these specific transaction types and specific offices or functions in Tutub.

The expected accounting terminology is present in this small corpus. Terminology for credits and debits appear in both Akkadian and Sumerian. Tutub 50 records a series of debits incurred by the farmers under Narām-Suen: la_2-ia_3 engar-engar. The expected counterpart for credits appears obliquely in Tutub 18, qualifying a number of sheep: udu zi-zi-ga ("lifted sheep," but in a more nuanced sense "booked out sheep").[202] In other documents the Akkadian *nasāḫum* "to pull up/out of" appears in place of its expected Sumerian counterpart ziga. A nominal form of this verb is used in the closing of Tutub 54:[203]

> e_3-a *na-as-ḫa* PN šu-du_8
> (The goods) went out; they are pulled up (i.e "booked out"). PN holds them.

Unfortunately, there are no other contemporary parallels to comment on the application of *nasāḫum* here.[204]

Somewhat more complex is the Sumerian word e_3-a, which appears in Akkadian texts suggesting that it is a Sumerogram for *ṣe'tum* "issuance."[205] In fact, during the Old Akkadian period, particularly the Classical period, instances of e_3-a in a Sumerian linguistic context are

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[202] In bookkeeping terminology this might more clearly be translated as "credited," that is those items removed/deducted from an individual's account by the central institution. This view assumes that the account was written from the point-of-view of the central institution.
[203] For various attempts at a translation of this troublesome passage see Sommerfeld (1999: 113). Sommerfeld does not equate the "tearing out" of *nasāḫum* with the "lifting" implied by ziga, however, A. Westenholz maintains that contextually and syntactically an administrative term is expected here.
[204] The relation between outgoing goods and credited goods is made more explicit in CUSAS 13, 135 where small cattle qualified as ma_2-a e_3-a ("out-going in boat(s)") are listed at the end of the account as udu zi-ga ("booked out sheep"). The equation is much clearer in Ur III administrative texts (e.g. *ASJ* 9, 325 1); however, attention must be paid to the perspective of the accounts, i.e. whether they are written by the local administration or the imperial administration. This detail alters the interpretation of "outgoing."
[205] This idea was suggested to me by A. Westenholz (personal communication, April 30, 2013).

quite rare.[206] The attestations of e_3-a in a clear Akkadian context come mostly from the northeastern region, but also appear at Girsu (RTC 101; STTI 107, 140) and Adab (Adab 967; TCBI 1, 229).[207] This distribution fits with the linguistic landscape of the period.

Tutub 46 is an account of various items dated to Narām-Suen, which closes with the phrase, *ana* Ur-Nintu *unakkis*. There has been confusion over the appropriate translation of the verbal form *unakkis*, with earlier scholarship interpreting it as "to slaughter" derived from the primary meaning of *nakāsum*, "to cut down/off (completely)" (Steinkeller and Postgate 1992: 9-10). B. Foster has argued for an alternative translation of a denominative D-stem based upon *nikkassum* "a balanced account" (Sumerian: nig_2-ka_9) (1989b; 1993c: 445). The examples cited by Foster in support of this translation are:

> Ama-bara *unakkis šu* GAN_2 gibil /
> Ama-bara balanced the account. It pertains to the new field. (BIN 8, 182)

> *ana* Anna *rē'îm nasiḫ in ṭuppīšu ula ḫubut in* SAG-UB *ši* Lagaš Mesaĝ *unakkis* /
> It was removed/deducted for Anna the shepherd. It was not put as debit on his tablet. In Sagub of Lagaš Mesaĝ balanced the account. (BIN 8, 141)

His arguments are largely circumstantial: the size of the presumed slaughtered herd is larger than average in the respective corpora, the prominent role of the agents involved lend itself to the annual reckoning of official accounts, and the variety of commodities are not limited solely to livestock (1989). He must concede, however, that the typical rendering of this concept in Akkadian is *nikkassam epēšum* ("to do the account"), which is not present in Sargonic period sources.

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[206] OIP 14, 124, rev. 3 may be Sumerian based on the prefixed verbal form, but the few additional attestations I have been able to locate date to the tenure of Meskigalla at Adab (CUSAS 11, 94; both CUSAS 11, 130 and 145 are broken at e_3-a.)

[207] Tell Suleimah (AIHA 4, 41 and 42); Gasur (HSS 10, 144); Ešnunna (MAD 1, 327); Mugdan (MAD 5, 88); Tutub (Tutub 49 and 54); Susa (MDP 14, 5, 23 and 71, MDP 18, 68); "Diyala" (MAD 4, 16, MVN 3, 57 and 60); unknown (BIN 8, 122, 131, 141 and 236, TCBI 2/1, 60, ZA 72, 27, fig. 1).

Sommerfeld follows Foster's interpretation in his edition of this text, citing as additional semantic support *JCS* 35, 211: 1, 10-12 (J. J. Glassner 1983):

> 1-barig munu$_8$ libir *šu ṭuppim maḫrim lama nukkus*
> Sixty liters of old malt, of the previous tablet/account, is not balanced.

Overall, I find the contextual evidence for the translation of *unakkis* as a denominalized verbal form meaning "to do the account" compelling; the interpretation is maintained here. However, an unresolved issue remains regarding Tutub 46, specifically, who is the agent balancing the account. The text states that the preceding account was balanced for Ur-Nintu, but does not record the subject of the verb. While Ur-Nintu does appear in several other texts in the Tutub corpus, there are no definitive contexts that would elucidate the relationship he has to the balancing agent here.

One of the problems Sommerfeld faced when categorizing the Tutub corpus based on the texts' layout and terminology was a small group of "anonymous" individuals (Tutub 19-21).[208] He noted that the individuals were marked by sex (guruš, dam, -nita, -munus) and age (dumu, gaba), but he could not ascertain the reason or motivation for such texts (1999: 49). I propose here that the practice of census taking was involved.[209] The documentation of the entire family unit, inclusive of children and infants of limited or no labor value, suggests this practice.

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[208] There is the occasional reference to title, filiation or profession, but these are exceptions within this subset of texts.

[209] However, I do not mean to suggest that Tutub 19 is a record of the entire working population of Tutub. As Sommerfeld states, there are likely more tablets yet to be excavated from the site that may belong to this same archive (1999: 32).
The practice of census taking is a widespread tool utilized by imperial structures to inventory resources in newly acquired territories. The early Roman king Servius Tullius enacted the first imperial census in the 6th c. BCE as part of a broader political policy to centralized power in his own office at the expense of the aristocracy. The Inca regularly commissioned censuses of their population prior to Spanish contact using their Quipu system. Likewise the Mauryan Empire in early India maintained detailed records of their population including information on their caste, occupation and livestock. In imperial Han China the first official census was undertaken during the consolidation phase in 2 CE.
More directly related to Mesopotamia are the regular cattle census in ancient Egypt, beginning in the second dynasty and the census lists from level IV of the palace at Alalaḫ (von Dassow 2008: 131-232).

The only value such young constituents have is either their future projected labor, or their implicit monetary value in the taxation of each extant citizen. Furthermore, the rare inclusion of craftsmen and the complete omission of high-level personnel and cultic personnel (e.g. šabra , maškim, sagi, pa_4-šeš, lu_2-kin-gi_4-a, etc.) also support the interpretation that these documents were an inventory of the labor resources of the predominantly unskilled subject population.[210] The details of the individuals are also revealing. Several of the personal names recorded with their families in these census records occur in other documents in the corpus, indicating the contemporaneity of the various texts in the archive (e.g. Bibi ga-$eš_8$, Suen-e nu-$banda_3$, Zuzu nu-$banda_3$).

The document Tutub 20 records a medley of individuals, who are ultimately qualified as *uḫḫurûtum*.

obv.	obv.
1) ⌜1(aš) guruš⌝ [i_3]-⌜li_2⌝-NE	1) 1 male worker of Ilī-NE;
2) 1(aš) dam zu-zu $abba_2$ iri^{ki}	2) 1 wife of Zuzu, a city elder;
3) 1(aš) guruš bi_2-bi_2 ga:$eš_8$	3) 1 male worker of Bibi, a trading agent;
3 lines erased	*3 lines erased*
7) ⌜1(aš) dam ^{d}suen-mu-da sipa	7) 1 wife of Suen-mūda, a shepherd;
8) [1(aš)] dam 1 dumu-nita a-bu_3-sa-du_3	8) [1] wife, 1 son of Abu-šadû;
9) ⌜1(aš) guruš⌝ 1 dumu-nita	9) 1 male worker, 1 son,
10) [1(aš)] dam $eš_2$-gid_2	10) 1 wife of Ešgid;
1 line erased	*1 line erased*
12) 1(aš) ⌜guruš ṭab$_6$-si⌝-ga ⌜sipa⌝	12) 1 male worker of Ṭāb-siga, a shepherd;
13) 1(aš) dam e-⌜na-^{d}⌝suen sipa	13) 1 wife of Ena-Suen, a shepherd;
rev.	rev.
1) *u_3-ḫu-ru-tum*	1) are the remainder.

This term is known from only a handful of other contexts; MC 4, 72, of unknown provenience, lists small amounts of grain attributed to various unqualified individuals as *uḫurrā'u*. P. Steinkeller derives *uḫurrā'u* from a *purussā'u* form of *aḫārum* "to be late, to remain behind,"

[210] Sommerfeld suggests that these lists functioned to maintain household sizes in order to adjust assignment duties and/or obligations (1999: 74).

ultimately interpreting this term as "remainder, arrears" (1992: 108). This would semantically equate the Akkadian term *uḫurrā'u* with the popular Sumerian accounting term la_2-ia_3 (Foster 1993c: 446).

Sommerfeld also includes the Old Akkadian letter, FAOS 19, Gir 3, that records the following order from an unnamed king to Lugal-ušumgal:

> *šūt in* tura *yu'uḫḫirūn līḫuz*
> Those, who were due to illness in default, he shall seize.

Those that are ill, and therefore not able to perform owed labor duties, are conceptualized as accruing a debt to the central institution (Kienast and Volk 1995: 70). Sommerfeld follows the interpretations of Steinkeller, Kienast and Volk. So, the text Tutub 20 maintains the sense that those individuals listed are in arrears. Several of the debitees included in this text also occur in the main census record (e.g. Bibi, Ilī-NE, Suen-e). I follow Gelb's (1979: 63) interpretation of the text, interpreting the women to be widows with no extant male head-of-household. Additionally, Sommerfeld notes the application of the simpler Ductus I in this text, which contrasts starkly with the more refined Ductus III used in Tutub 19 (1999: 76). This underscores the presumed phases of accounting, with preliminary records appearing to be brief, cursory and quickly done, while the final reckonings were done with great care and detail.

A second problem left unresolved by Sommerfeld, and other researchers who have attempted its decipherment, is the term *za-ru* found in Tutub 1 and 2. These texts form part of Sommerfeld's personnel lists (*Personenlisten*) category; both texts present groups of approximately 30 workers (Sumerian: guruš) organized under two separate overseers (Sumerian: ugula), Pūšu-kēn and Babālum, respectively. Each list provides patronyms, reducing instances of mistaken homonymy. A cursory review of the documents demonstrates that there is

no overlap between the guruš in the two distinct groups.[211] However, it is unclear why these two groups and not any work groups under the remaining ugulas (Arkuku, Itūr-Suen, Zamran, Iliš-mani, Dagān-alānīšu and Ilum-bani) are qualified as *za-ru*.[212]

Gelb's original suggestion was that this term referred to a profession (1957: 304). He reconstructed a middle-weak root for the term: z-ʕ$_x$-r. Following Gelb's suggestion that the underlying root contains an unidentified guttural (z-ʕ$_x$-r), the rules of Old Akkadian grammar permit several candidates for this guttural.[213] In the Diyala texts the vowel coloring in the presence of *alif* (ʕ$_1$) is attested, but still irregular, as is the same process for ayin (ʕ$_4$) (Hasselbach 2005: 115-118). The /a/ vowel was more regularly preserved in the environment of *ayin* (ʕ$_5$), but this guttural was typically expressed in the orthography with /ḫ/. Therefore, the guttural radical could be any of the softer phonemes (ʕ, h, ḫ) or a select few of the harder gutturals (ḥ, ʔ).[214]

Potential verbal stems are not forthcoming; there are few known verbal roots that correspond to these phonetic parameters, especially in this early period of Akkadian. Gelb cites *šawārum* from the highly problematic Old Akkadian Love Incantation (MAD 5, 8). W. von Soden explains the root as meaning to "twist" (1972: 274), which lends itself to the interpretation as "neck" by A. and J. Westenholz and B. Groneberg in their respective editions of the incantation (1977: 210; 2001: 17). In the Old Akkadian incantation the medial /w/ is preserved

[211] This paradigm extends to all documents listing workers under an ugula; this phenomenon supports the contemporaneity of the entire archive.
[212] Sommerfeld cites corresponding occurrences in Tutub 3 and 4, but the colophons are too fragmentary to offer any helpful sign recognition (1999: 52). There are no other attestations of this word known in the Sargonic corpus. However, the same orthography appears in a personal name at Tell Beydar (Subartu 2, 92).
[213] In Old Akkadian phonology the *za* sign could indicate any of the following phonetic realities: /za/, /ze/, /ṣa/, /ṣe/, /sa/, /se/.
[214] More regular terms, such as *ṣaḫrum* ("small") are regularly written with the gutteral still preserved: *za-ah-ra* (*ṣaḫrā*) (FAOS 19 Di 4 rev. 3) and *za-ha-ar-tim* (*ṣaḫartim*) (OSP 2, 29).

in the orthography, contradicting the form seen here at Tutub.[215] Furthermore, the semantics of this verb do not fit the administrative context presented here.

Equally as elusive is the Old Akkadian verb *ziārum* "to hate," only seen in a personal name from the Maništūšu Obelisk: *i-zi-ir-gul-la-zi-in*. This personal name "he hates all of them (women)" is truly exceptional in the history of Mesopotamian nomenclature and is therefore dismissed by Gelb (1957: 304). Not only does this candidate fail to fit the context of Tutub 1 and 2, but the medial /y/ does not contract to /a/ as seen in Tutub's *za-ru*.

The most straightforward interpretation, I believe, is that *za-ru* is a phonetic spelling of the Akkadian word *ṣērum* ("steppe"; Sumerian: edin). The steppe was useful for animal grazing, an activity still practiced in the modern day Diyala region. Tutub 23 mentions anše edin-na ("equids of the steppe") as one part of the animal inventory, but this animal is present outside of the foothills as well. It is possible though that these two work groups were assigned to the edin, which would explain why not every work troop was notated with *za-ru*; most stayed near the city.[216] The presence of the personal name *za-ru* at Tell Beydar is then paralleled by the use of edin as a personal name at Ešnunna in OAIC 12 obv. 4.[217]

Equally as perplexing, but slightly more pervasive throughout the texts, is the occasional mark PAP after personal names. This phenomenon is more frequent within the Tutub corpus (Tutub 1-5, 10, 14, 30, 36, 46) than without. A few examples are known from Sargonic Adab (*Adab* 842; CUSAS 13, 21), four from Ešnunna (MAD 1, 86 and 330; OAIC 33; MC 4, 51), one from Girsu (RTC 96), one from Nippur (OSP 2, 50), three from Gasur (HSS 10, 51, 87 and 188),

[215] *za-wa-ar-su* u_3 *za-wa-ar-ki*.
[216] There is some correlation between the personal names of personnel working with animals and those under the command of Pūšu-kēn and Babālum, but without clear patronyms in all cases this remains conjecture.
[217] There are other examples that incorporate edin as part of the whole name, but this is not a direct parallel to the Tell Beydar evidence and therefore not presented here.

one from Susa (MDP 14, 85) and a one from an unknown provenience (CST 18).[218] In Gelb's original edition and preliminary treatment of the Diyala texts he refers to the PAP signs in his transliteration as check marks (1952: 171). Z. Yang concluded from the evidence in the Adab corpus that PAP meant "total[?]" and was a variant of a-tag ("damaged by water") and zi-ga ("lifted, credit"), all denoting a form of debt from the storehouse (1989: 37). However, the regular placement after each personal name entry in the Tutub corpus does not support Yang's conclusions of "total" from the Adab corpus.

The occurrence of PAP in the Sargonic corpus is relegated to Classical period texts, suggesting that it was a feature of the more standardized bureaucracy of Narām-Suen and/or Šar-kali-šarrī. However, this practice was not an innovation of the Classical kings since it is attested in the preceding Early Dynastic corpus (e.g. OSP 1, 38, 109; 138; TMH 5, 33; DCS 2; FAOS 15/2, 67).[219] Typically, marking administrative entries with the PAP sign, used as a form of "check mark," denotes bookkeeping items entered into another account. This would be useful for organizing a collection of smaller individual receipts into a monthly account in order to determine one's balance (i.e. surplus or arrears) with the lender (i.e. the central institution).

One potentially informative example of this "check marks" practice from the Diyala corpus comes from the very similar accounts of MAD 1, 295 and 330. These two accounts are part of a series of monthly accounts involving the same set of individuals: Šībum, Dadi, Kurub-ilāni, Šī-šadi, Eštar-nu'id, Dada. Each individual receives the same amount of animal fodder suggesting they are of similar occupation or social standing. The series of four monthly accounts (MAD 1, 102, 273, 293 and 295) record the same individuals, all receiving the same amounts of grains; however, MAD 1, 330 departs from this pattern. It is first important to note that MAD 1,

[218] Gelb has also noted their use in Pre-Sargonic texts (PBS 9, 83; Nik 1, 41 and 52).
[219] It is curious that the majority of attested examples of this practice in the Early Dynastic periods derive from Nippur.

330 is recorded in the same month as MAD 1, 295 indicating that it is recording the same information as MAD 1, 295, but at a different administrative level. The other key observation is that only those individuals receiving 4-barig measures of grains are recorded with the PAP sign (Šībum, Dadi, Kurub-ilāni, Šī-šadi, Eštar-nu'id, Dada).[220] It is likely that these six individuals were re-entered into another account specific to their occupation or social standing.

MAD 1, 295
obv.
1) 4(barig) še da-di$_3$
2) 4(barig) si-hur-saĝ
3) 4(barig) da-da
4) 4(barig) ku-ru-ub-dingir-dingir
5) 4(barig) abba$_2$
6) 4(barig) ⌜eš$_4$-tar$_2$⌝-nu-id
blank space
rev.
1) 2(barig) ^{d}utu-e$_2$!(sa)
2) 4(aš) 1(barig) ⌜še⌝ gur
3) za-wi
blank space
4) |ŠU+LAGAB| 1(u) la$_2$ 3(barig) še gur
5) 1(aš) iti *za-a$_3$-tum*

MAD 1, 330
obv.
1) 4(barig) [...] še ⌜gu$_4$⌝
2) da-da
3) 4(barig) PAP si-hur-saĝ
4) 2(aš) še gur ma-an-sa-nin-su
5) 4(barig) PAP da-di$_3$
6) 4(barig) ⌜PAP⌝ ku-ru-ub-dingir-dingir
7) 4(barig) PAP abba$_2$
8) 4(barig) PAP eš$_4$-tar$_2$-nu-id
9) 4(aš) 1(barig) še gur
10) za-wi
blank space
11) 2(barig) ^{d}utu-e$_2$
blank space
rev.
1) |ŠU+LAGAB| [1(u)] 1(aš) 2(barig) še gur
2) [iti] ⌜*za*⌝-*a$_3$-tum*

The location of goods is only alluded to in a handful of exemplars; three of the deliveries record the location of certain small cattle as "in the house" (Sumerian: e$_2$-a; Akkadian: *ina bētim*). The presence of a storehouse is noted in Tutub 16, a broken and problematic text. There is no attestation of a palace (Sumerian: e$_2$-gal; Akkadian: *ekallum*) here at Tutub, which is consistent with the archaeological findings.[221] The precise structure associated with the bulk of tablets found in Sounding H remains undetermined and requires further excavation.

[220] In Dada's entry in MAD 1, 330 the location of the expected PAP sign is broken, but the break pattern on the tablet suggests that a PAP sign was written there.
[221] Compare with the Northern Building at Ešnunna, which is referred to as simply "the house."

4.6. Metrology

Given the archive from Tutub's focus on labor organization, little can be gleaned about the metrology system. There are only a few contexts that permit a reconstruction of the underlying metrology systems. The capacity system twice marks a gur measure explicitly as the 300-$sila_3$ gur *Akkade* (Tutub 46 and 49).[222] Otherwise, no other texts preserve increments of the gur (i.e. barig, ban_2) that would allow for a clear interpretation of the absolute capacity. However, Tutub 48 records disbursements of 2 barig 3 ban_2, which is a perfect half (150 $sila_3$) of the imperial gur.[223] Unfortunately, the total of this document is broken, so no mathematical reconstruction is possible.[224]

4.7. Prosopography

The personnel lists from Tutub offer a plethora of prosopographical information, replete with frequent patronymics and/or occupation designations. However, clear repetition within the Tutub corpus is very rare. This phenomenon concurs well with the hypothesis that these lists of individuals served as a form of early census, recording individuals only once, but including information about household size and labor potential.

4.7.1. The Royal Family

Direct reference to royal family members in Tutub is preserved in the fragmentary Tutub 63, which obviates a clear interpretation of its contents; however, it does preserve sections detailing garden plots owned by the royal family. Included in this list are Bin-kali-šarrī,[225] son of Narām-Suen and brother to the future king Šar-kali-šarrī, Yeṭib-mer, who is known as a šabra -

[222] The context of these two texts is suggestive; one appends an official year name to the account and the other tablet notes the movement of goods away from Tutub.
[223] This was a popular increment in the Tell Suleimah texts, where the 300-$sila_3$ gur was used.
[224] Tutub 50 records various amounts of grains owed by farmers, but again, there is no preserved totals section.
[225] He also appears in Tutub 64, a legal contract, but the context is too fragmentary to reconstruct the full context of Bin-kali-šarrī's role.

e_2 (“chief administrator of the household”) during the reign of Narām-Suen (Foster 1980: 29ff; 1982a: 36; Foster 1982b: 143; 1993a: 28ff; Glassner 1986: 30; Michalowski 1981: 173; Westenholz 1984b: 78-80; 1993: 1987: 94ff), and the nin-e_2 (“lady of the household”), possibly synonymous with the queen’s household. A related text from the Classical Sargonic period in Girsu illustrates the synchronicity of these individuals (*RA* 9, 82):

obv.	obv.
1) [n udu niga]	1) [n fattened sheep]
2) [lugal]	2) [for the king;]
3) 60 udu [niga]	3) 60 fattened sheep
4) ⌜nin⌝	4) for the queen;
5) 10 šar-ka$_2$-li$_2$-šar$_3$-ri$_2$	5) 10 (fattened sheep) for Šar-kali-šarrī;
6) 10 bi-in-ka$_3$-li$_2$-šar$_3$-ri$_2$	6) 10 (fattened sheep) for Bīn-kali-šarrī;
7) 10 tu-da-na-ap-šum	7) 10 (fattened sheep) for Tūta-napšum;
8) 30 šabra e_2	8) 30 (fattened sheep) for the majordomo;
9) 10 e_3-ṭib-me-er	9) 10 (fattened sheep) for Yeṭib-mer;
10) 10 [be]-li$_2$-ur-saĝ	10) 10 (fattened sheep) for Bēlī-uršānum;
11) 10 šu-ma-ma	11) 10 (fattened sheep) for Šū-mama;
....	....

Additional textual evidence indicates that the princess, Tūta-napšum, was installed in Nippur as a priestess of Enlil. Therefore, it is curious why she is receiving sheep disbursements from Girsu, along with her brothers and parents. There are several possible explanations available. First is that this record pre-dates her installation in Nippur and she was therefore present in Girsu. Second, this was a disbursement specifically for a royal visit of the family to Girsu (Foster 1980). Third, she maintained an estate in Girsu independent of her primary residence.[226] This final potential explanation also parallels the royal ownership of garden plots at Tutub. The family could have owned property attached to their local (seasonal?) residence, or owned property without physical residence as a local form of tribute. These two explanations are not mutually exclusive.

[226] Tūta-napšum has personnel at Ešnunna (MAD 1, 179), and also received goods in Isin (MVN 3, 1).

Further incorporation of the royal family in the local administration is evidenced in Tutub 65, where Nabī-ulmaš, governor of Tutub and son of Narām-Suen, inspects (Akkadian: *ibri*) goods in the city of Tutub. However, Nabī-ulmaš was not the only royal offspring placed in a local position of authority. The princes were occasionally installed as governors (Sumerian: ensi$_2$) in northern cities, while the princesses were often installed as priestesses (Akkadian: *entu*) at key cultic sites throughout Mesopotamia.

4.7.2. The State Organization at Tutub

The architectural structure associated with the Tutub corpus (Sounding H) was never fully excavated; therefore, the socio-economic context cannot be ascertained through archaeology. However, the information embedded within the texts does provide an additional avenue for researching the structure of the administration apparatus present on the site during the reign of Narām-Suen. Several texts outline a full range of personnel necessitated by a complex household. The most succinct of the records, Tutub 10, inventories personnel associated with the central institution producing these records.

obv.	obv.
1) [...] x	1) ...
2) 25 sagi PAP	2) 25 cup bearers,
3) 11 *šu-ut* ^{ĝeš}gigir$_2$ PAP	3) 11 (male workers) of the chariot,
4) 6 *šu-ut* ^{ĝeš}gu-za PAP	4) 6 (male workers) of the throne,
5) 6 *šu-ut* ^{ĝeš}e$_2$-gigir$_2$ PAP	5) 6 (male workers) of the chariot house,
6) 9 šu-i	6) 9 barbers,
7) ⌜4⌝ lu$_2$-kin-gi$_4$-a	7) 4 messengers,
8) [n]+⌜3⌝ azlag$_3$	8) 3+ fullers,
9) [n] muhaldim 14 nar-sa-3	9) n cooks and 14 ... singers,
10) [2] *ša* kurušda	10) 2 (male workers) of the fattener,
11) [n ...] x kisal	11) n courtyard (personnel),
12) [n ...] ⌜šabra⌝	12) n chief administrator(s),
1 line destroyed	*1 line destroyed*
rev.	rev.
1) [n sipa] ⌜anše⌝	1) n equid shepherds,
2) [n]+⌜2⌝ še$_3$-nam-i$_3$-da	2) 2+ Šenamidā [prisoners].
3) [n] ⌜lu$_2$⌝-kikken	3) n millers,
blank space	*blank space*
4) lŠU+LAGABl 280 guruš	4) total: 280 male workers.

Additional supporting documents include the names of specific professions or personnel and are available in the Appendix. The full range of personnel and professions range from shepherds, farmers, leatherworkers, weavers, fullers, carpenters and maltsters to stable hands, throne-bearers, barbers, messengers, cup-bearers, singers, land surveyors, sculptors, smiths, priests, trading agents and priests. The presence of a full range of garment professionals at Tutub likely coincides with a robust textile industry, which may possibly be related to the pastoral economy of the region, giving citizens of this region easy and affordable access to the raw materials for textiles.

4.8. Collocation Analysis

As in other administrative corpora there are numerous types of transactions at work. However, it is not always clear why one transaction type is chosen in place of another (e.g šu-du$_8$, *im-ḫur*, mu-ku$_x$). While many lexemes denote a similar kind of movement (i.e. into the possession of the central institution), there must be factors that decide how a specific transaction is to be qualified. Several of the quintessential Sumerian bookkeeping transaction termini are missing from the Tutub corpus (e.g. šu ba-ti, zi-ga) being replaced by their Semitic counterparts (e.g. *yimḫur*, e$_3$-a). Using AntConcordance, the transaction types of Tutub were run through a collocation search using a window that expands four words to the target word's left. A minimum collocate frequency of two will be maintained. Given the high frequency of broken passages in this corpus, the statistical measurements are overall lower than more intact archives. The results are as follows:

mu-ku$_x$	**MI**	**T-score**
maš$_2$	*4.88*	*2.73*
udu	*4.69*	*2.54*
ga	6.24	1.97
sila$_4$	4.52	1.35

Table 25: Collocates for mu-ku$_x$ at Tutub

The commodities closely associated with the phrase mu-ku$_x$ ("delivered") are circumscribed to ovicaprids (maš$_2$, udu). A closer perusal of the textual evidence from Tutub supports this quantification of the data; mu-ku$_x$ appears in eight texts all of which are accounts of sheep and goats. This is particularly striking in view of the following collocates.

im-ḫur	**MI**	**T-score**
gu$_4$	8.00	1.41

Table 26: Collocates for *yimḫur* at Tutub

iš-te$_4$	**MI**	**T-score**
mu	6.93	1.72
gu$_4$	6.19	1.39
dumu	2.53	1.17

Table 27: Collocates for *ište* at Tutub

Here the Akkadian terminology was exclusively paired with the larger cattle, albeit with an overall low frequency within the corpus causing low T-scores and high MI-values. A closer look at the occurrences indicates that it was not necessarily the living animals themselves that were denoted by *yimḫur*, but their leather and sinew bi-products that were of interest in the accounts. Conversely, *ište* appears reserved for living large animals.

I would not argue that the pattern observed in the Tutub data can be extended to other sites.[227] Each administrative center certainly maintained its own idiosyncrasies that cannot be uncritically assumed for other centers. Whether the difference in the language of the lexemes examined in this section is meaningful remains speculation at present.

[227] "Delivered" (mu-ku$_x$) was used for a variety of commodities at other Sargonic sites.

4.9. Chapter Summary

Tutub was home to a robust textile industry as a consequence of the productive herding economy in the area. This made the city an attractive location to the growing Akkadian Empire evidenced by the presence of the royal family in Tutub. Moreover, the city's northern purview and account of plunder, most likely from one of Narām-Suen's campaigns into the Zagros Mtns., suggests that Tutub was a close ally of the Akkadian kings. The hypothesized use of an early census, unique at this time in Mesopotamian history, may comment further on the labor organization of the site.

The use of "check marks" in their administration as well as the complementary distribution between mu-ku$_x$ ("delivered") and *yimḫur* ("he received (it)") denote idiosyncracies in the bookkeeping practices of Tutub. While the use of PAP as a form of "check mark" is attested in predominantly northern sites, the specific use of mu-ku$_x$ and *yimḫur* to denote transactions with small and large cattle, respectively, is not shared by other northern sites; it is a feature specific to Tutub. This lack of standardization, even with Nabī-ulmaš, son of the king, operating as governor at Tutub suggests that the region was able to retain a level of local flavor.

Chapter Five

5.0. Ešnunna

The corpus of Ešnunna (modern Tell Asmar), being the largest of the excavated Diyala sites from this period, is comprised of two distinct yet related archives: the Private Houses and the Northern Building.[228] For each sub-archive the twenty-five most common terms are given below. First those from the nine Classical Sargonic texts excavated from the Private Houses.

Rank	Raw Frequency	Word/Lexeme	English Translation
1	11	*šu* (all variants)	Of
2	10	*a-na*	To/for
3	10	$eš_2$-gid_2	Surveyor
4	10	gin_2	~8.33 g
5	10	ku_3-babbar	Silver
6	8	gi	Length measure
7	7	tug_2	Garment
8	6	še	Barley
9	5	gur	Capacity measure
10	5	ma-na	~500 g
11	4	mar	West
12	4	u_5	South
13	4	udu (all varieties)	Sheep
14	3	i-ku_8-num_2	Personal name
15	3	*im-ḫur*	He received (it).
16	3	*iṭ-bu-ḫu*	He slaughtered.
17	3	kur	East
18	3	$kuš_3$	Length measure
19	3	mer	North
20	3	tur	Small
21	2	$abba_2$	Elder
22	2	GAN_2	Field
23	2	sa_{10}	Exchange
24	2	*u-bil*	He carried.
25	2	dam-gar_3	Trading merchant

Table 28: Word List for the Private Houses

[228] The five unexcavated texts assigned to Ešnunna in section 2.4 are omitted here because their precise find spot is difficult to ascertain.

The hallmarks of land purchase documents are common in the private houses archive (gin_2, GAN_2, $kuš_3$, sa_{10}, ma-na, u_5, kur, mer, mar, *yimḫur*). Moreover, the increased use of Akkadian verbal forms connotes a local flavor, documents written in the local Semitic language in place of the bureaucratically entrenched Sumerian. Any trace of labor management is absent from this small corpus, indicating a smaller operation in the private economy related by these documents.

The larger archive from the Northern Building consisting of 196 Classical Sargonic administrative texts is summarized by word frequency below.

Rank	Raw Frequency	Word/Lexeme	English Translation
1	343	še	Barley
2	253	gur	Capacity measure
3	143	*šu* (all variants)	Of
4	100	dumu (all variants)	Child
5	69	ku_3-babbar	Silver
6	64	gur saĝ-ĝal$_2$	Capacity measure
7	62	gu_4 (all varieties)	Oxen
8	59	udu (all varieties)	Sheep
9	54	GAN_2	Field
10	49	sa_{10}	Exchange
11	48	ma-na	~500 g
12	44	*im-ḫur*	He received (it).
13	30	mu	Year
14	30	siki	Wool
15	26	anše (all varieties)	Onager
16	25	$maš_2$	Goat
17	24	*a-na*	To/for
18	24	lPU$_3$.ŠAl-ru-um	Personal name
19	22	zu-zu	Personal name
20	21	u_3	And
21	20	šu-ma-ma	Personal name
22	19	PAP	--
23	18	iti	Month
24	17	dug	Pot
25	17	SIG_2-GAN	--

Table 29: Word List for the Northern Building

The activities of the Northern Building accord well with the expectations of a central state institution: managing resources, issuing rations and following standardized dating procedures. Not only do these documents implement dating formulas, but the exclusive use of PAP in the Northern Building archive adds to the context of this elusive notation. This frequency analysis indicates that barley and ovicaprids were important parts of the economy of the Northern Building, and to a certain extent secondary products (siki, dug). The larger cattle were probably retained as plow teams to work large tracts owned by this central institution.

5.1. Archeology

The majority of the tablets in this study were discovered at the site of Tell Asmar (ancient Ešnunna) during the course of excavations carried out by the Oriental Institute between the years of 1930-1936 under the supervision of H. Frankfort with T. Jacobsen working as the epigrapher. The Oriental Institute undertook this series of campaigns of Diyala sites (see Ḫafajah/Tutub and Tell Agrab below) after local residents began harvesting caches of tablets and selling them on the antiquities market disembedded from their original archives and contexts. The site of Ešnunna is located approximately 12.5 miles (20 km) northeast of Baghdad on the Daban (ancient Durul) canal, an offshoot of the Diyala River. The canal borders the west side of the site.

Excavators reconstructed two major phases of occupation at Ešnunna corresponding to an earlier phase in the northwest area of the mound, and a later phase in the southeast. Only the occupation in the northwest area is relevant to the Old Akkadian tablets under discussion here. This northwest area was occupied from the Uruk III (Proto-literate) period (3200-2900) until the end of the Old Akkadian period (2300-2200). The site was largely, but not wholly, unoccupied from the end of the Old Akkadian period until the beginning of the Ur III period, when inhabitants began settling in the southeast area. This gap in occupation is generally attributed to

the Gutian invasion, especially when occupation patterns of the region are taken into consideration.

The site itself is surrounded by a city wall, although its full extent is unknown. One of the primary buildings in the northwest area is the Temple of Abu, in use from the Uruk III period until the early Old Akkadian levels (strata I-IV) when it was reduced to a single sanctuary. This sanctuary fell out of use by the late Old Akkadian period. The Northern Building was built in the ED II period and remained in use until the Old Akkadian period when it was remodeled as a network of houses, which remained in use until the Old Babylonian period under the reign of Ilšu-ilīya. A separate area of houses was also uncovered in this northwest area, which were occupied from the Uruk III (Proto-literate) period until Ilšu-ilīya.

The stratigraphy of Ešnunna has recently been updated by M. Gibson (2011):

Area and Stratum	Date
Houses I-III	Late and post – Akkadian
Houses IVa	Narām-Suen – Šū-Durul
Houses IVb	Rīmuš/Maništūšu? – Narām-Suen
Houses Va	Early Akkadian
Houses Vb	ED IIIb – Early Akkadian
Houses Vc	ED IIIb
Northern Palace Main Level	Akkadian
Earlier Northern Palace	ED IIIb – Early Akkadian

Table 30: Ešnunna Stratigraphy

The refined stratigraphy of the house section sub-divides this small group even further into those attributed to the Early Sargonic period (Stratum Va), the Middle-Classical Sargonic period (Stratum IVb) and the Classical-Late Sargonic period (Stratum IVa) (Gibson 2011) (see Appendix for individual tablet stratigraphy). These stratigraphic delineations are so broad that they are not particularly informative for the textual corpus. It is possible under Gibson's paradigm that all texts from Stratum IV were from a particularly active period under Narām-Suen's reign.

Excavation of the Northern Building revealed the holes dug by locals in pursuit of tablets or other valuables. In these holes debris and fragments of Old Akkadian tablets were found, strengthening I. J. Gelb's hypothesis that the Oriental Institute's purchased tablets were likely from this site (1955: 169-172).[229] Moreover, the contents of the purchased texts correspond closely, at points, with those excavated from the Northern Building, strongly suggesting the two corpora could have belonged to the same historical archive. The tablets excavated from this site were found in the 1931/32, 1932/33, 1933/34 and 1934/35 campaigns with the find spots corresponding to the Northern Building[230] (D-F) and the private houses (G-K in strata IVa-b).[231] The main level of the Northern Building and stratum IVa of the Private Houses correspond to the Classical Sargonic period according to Gibson's analysis of the Akkadian period material culture in the Diyala (1982: 533-535). Based on two bullae sealings bearing the name Šū-Durul found in stratum IVa, this level extends to the Late Sargonic period. All excavated texts were published by Gelb in MAD 1 (nos. 1-195).[232]

The distinct find spots of one cache from the Northern Building and another from a network of private houses is helpful for ascertaining the function of each type of institution. The language of these two disparate corpora is similar, prohibiting any interpretation that would impose a foreign, intrusive element onto the agents of the Northern Building. These two separate

[229] Gibson, after combing through the original excavations files, believes that the cache of tablets found in the robber hole E 15 were in fact from E 16 (2011: 67).
[230] P. Delougaz argues that the function of the Northern Palace in the Old Akkadian period was an "industrial center" associated with the "women's house" mentioned in the tablets found therein. He argues that the abundance of drains and the sophisticated pipe system suggests that leather-making was the local industry because it "required the use and disposal of considerable quantities of water in its several successive operations, from soaking the fresh hides to tanning" (Delougaz 1967: 197-198). This is not the only interpretation; H. Frankfort interprets the building as a private residence, likely of a wealthy citizen (1934 17:23). J. Margueron, in his study on Bronze Age palatial structures correlates this structure with the nearby Abu Temple and interprets them as one complex (1982:122-144).
[231] For a complete and detailed list of find spots see the Appendix.
[232] B. Foster has suggested that only MAD 1, 1-163 can clearly be identified as coming from Ešnunna (1982e: 7).

archives share a calendar, and the same individuals are seen interacting in both the Private Houses archive and the Northern Building archive. This indicates that the organization of Ešnunna was not rigidly segregated.

5.1.1. Tell Agrab

The site of Tell Agrab has not yet been associated with an ancient city name, but was part of a network of sites active during the late third millennium in the Diyala. It is situated approximately 15 miles (24 km) west of Ešnunna, also along the Durul canal. The Oriental Institute, as part of their Diyala campaign, excavated Tell Agrab for two seasons: 1935/36 and 1936/37. The main structure identified on the site was the Temple of Šara. Occupation of this site dates back to the Ubaid period and continues, with a brief interruption, from the ED IIIb period through the Ur III period, when it resumes occupation until the Isin-Larsa period. The private houses uncovered on the site date to either ED I or Isin-Larsa. A small cache of three tablets were found on Mound A during the 1936/37 campaign and published in MAD 1 (nos. 267-269).

Publication No.	Find Spot	Associated Structure	Excavation No.
MAD 1, 267-269[233]	E-F 15-16 (Trench 6)		Ag. 36: T.1-3

Table 31: Findspots for Tell Agrab Texts

These texts share the anticipated features of a northern corpus, specifically a predominance of Akkadian in place of the Sumerian language. The corpus is assigned to the reign of Šar-kali-šarrī based upon his year name in MAD 1, 268:

> *in* 1(diš) mu šar-ka$_3$-<li$_2$>-šar$_3$ dun$_4$ *mar-tu iš$_{11}$-a-ru* /
> In the year Šar-kali-šarrī conquered the weapon of the Martu.

[233] The assignment of MAD 1, 268 to Tutub by B. Foster in his "Archives and Record-keeping in Sargonic Mesopotamia" (1982e: 19) is unclear to me.

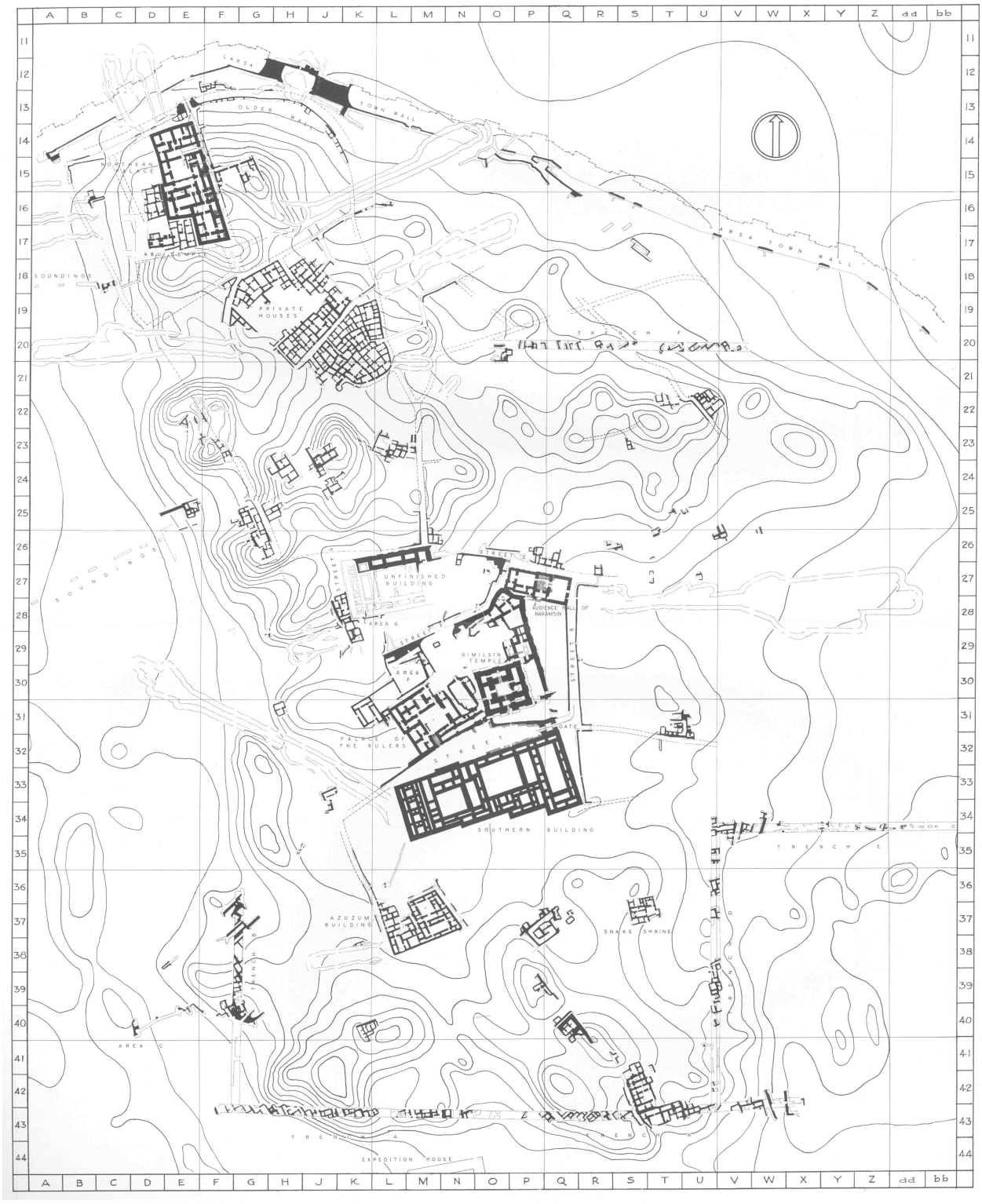

Figure 17: Tell Asmar Excavation Map (from OIP 88, plate 23)

Figure 18: Northern Palace at Tell Asmar, Main Level (from OIP 88, plate 37)

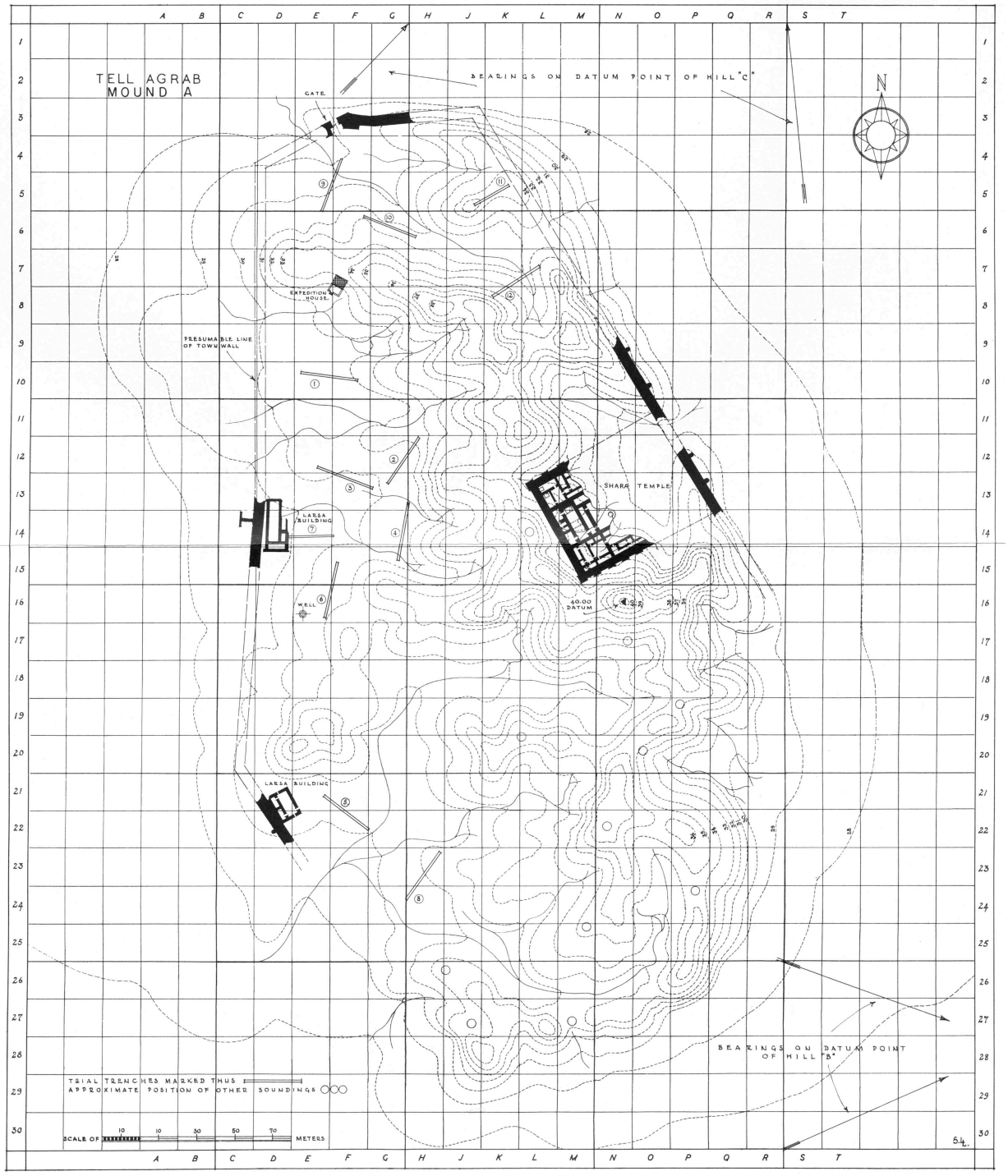

Figure 19: Tell Agrab Excavation Map (from OIP 88, plate 48)

5.2. Previous Scholarship

In conjunction with the Old Akkadian texts from Tutub and Tell Agrab, the corpus from Ešnunna was initially published by I. J. Gelb in *Sargonic Texts from the Diyala (*MAD 1). In the first installment of his Materials for the Assyrian Dictionary series, he presented in cursory form the 195 excavated tablets from Ešnunna as well as 67 unprovenienced texts believed, based on internal and contextual evidence, to derive from the site of Ešnunna. The most convincing evidence for the shared origin of these two distinct sets of tablets can be seen in the simple comparison of MAD 1, 5 + 117 + 133, 23 and 102 with MAD 1, 273, 284, 293, 295 and 330. More directly the join made by MAD 1 158 and 328 clearly indicates that these separate acquisitions were originally from a single location. This connects several of the tablets purchased by the Oriental Institute to the robber hole in the Northern Building.

The excavated tablets originate from two distinct find spots on the site (see Fig. 21): a robber hole burrowing into levels of the Northern Building (excavation square E15), and those excavated from a cluster of private houses (excavation squares D 15-16, F 17, G19-20, H 18, J 18-20, K19, 21). The find spot organization loosely guided the publication presentation with MAD 1, 1-165, 173, 182 deriving from the Northern Building, and MAD 1, 166-172, 174-181, 183-190 originating from the Private Houses area.[234] Essentially, no additional information aside from a basic transliteration and accompanying indices are included in this edition.

The present study will not utilize every tablet excavated from the site since I am limiting the data set to Classical period administrative texts. Archeologically, this also delimits tablets based on the stratum, where applicable. Following Gibson (2011), only tablets from the main

[234] The Private Houses also yielded three school texts and one letter (MAD 1, 191-194).

level of the Northern Building and stratum IVa of the Private Houses are considered Classical Sargonic as defined here.

The specific context of the two findspots for this archive is a significant variable in any inquiry. The precise function of the Northern Building is unclear, but certainly not directly equitable with the smaller networks of private domiciles nearby. Therefore, the excavated texts will be tentatively separated into two sub-corpora on the basis of their find spot. Any patterns or findings within the Ešnunna texts will be interpreted through this paradigm to ascertain its applicability.

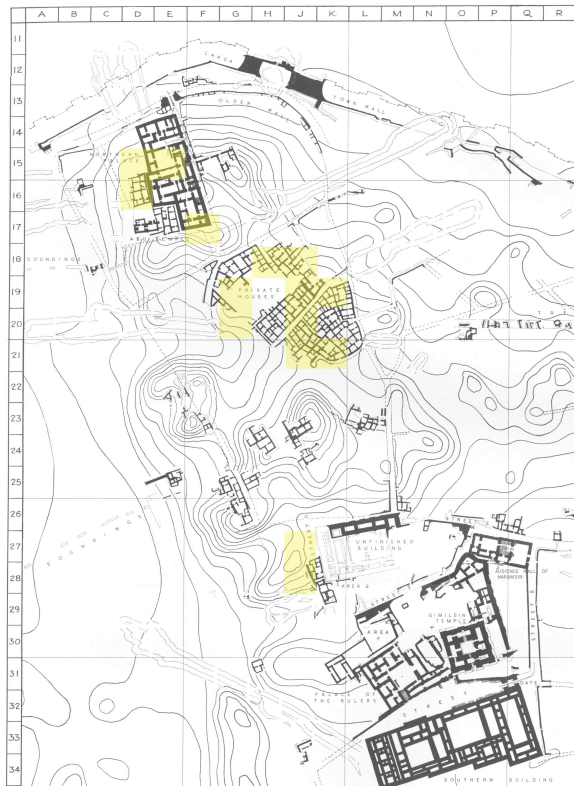

Figure 20: Detail of Tablet Findspots at Tell Asmar (after OIP 88, pl. 23)

The tablets excavated from the series of Private Houses consist of various genres.[235] The economic documents from the Private Houses betray a variety of activities ranging from animal slaughter, trading in lapis and metals, an impressive betrothal gift, the retention of elite personnel, land measurement and sale to grain disbursements. The variety of transactions included in this corpus underscores the dynamic and active nature of the economy of individuals outside of the central institution.

[235] The seven school texts excavated from the Private Houses show a rough clustering around squares J18-21 (inclusive of the adjacent H18 square), with a single outlier in K21 of possibly earlier date. Despite the general congregation of these texts around a specific area in the Private Houses, the archeological squares do not correspond to any one structure, but rather cut across several domestic units. This precludes suggesting one specific location as a "school house."

In the subsequent treatment below, careful distinction will be maintained between those texts attributable to Ešnunna either through controlled excavations or content overlap with an excavated text, and those attributable to the Diyala only generically based on increased Semitic lexeme, prosopography, etc. (see Chapter Six). The assumption that these texts derive from Ešnunna is avoided *in lieu* of testing that same hypothesis through this analysis. The use of the digital tool set outlined in the previous chapter will be brought to bear, leading to a statistical quantification of similarity or dissimilarity between the excavated and the unexcavated Diyala texts. The results of this investigation are presented in the next chapter.

Despite Ešnunna's relatively large corpus among Old Akkadian Diyala sites, few studies have addressed the contents of these tablets.[236] G. Visicato framed his study of the Ešnunna texts through the prosopography of the two discrete, yet related clusters (Northern Building and Private Houses), which is maintained here (1997). Through his focus on prosopography he is able to reconstruct two distinct groups of tablets embedded within the larger archive of the Northern Building, neither of which interact with the tablets excavated from the Private Houses, however.

His first group is a series of ration lists (MAD 1, 3, 5, 9, 12, 42, 46 + 101, 53, 61, 73, 81, 87 + 118, 96, 100, 106, 132, 137 and *AuOr* 9, 8) centered on the lengthy account in MAD 1, 163 annotated as "rations of the household in the month of Halut" (še-ba e_2 iti *halut*). Overall, the obstacle of homonymy is difficult to evade despite Visicato's optimistic conclusions, yet there is one instance of clear relation. The smaller account MAD 1, 53, appears to be copied into this larger account maintaining the same orthography and ration amounts. Many of Visicato's other examples do not demonstrate consistency in ration amount or any overall retention of the original

[236] W. Sommerfeld plans a re-edition of these texts in his forthcoming IMGULA volumes.

order of personal names. Particularly the variation in ration amount undermines Visicato's conclusion that MAD 1, 163 is the monthly summary account of all other tablets in his Group 1.

His second group is comprised of a subset of texts recording individuals receiving large quantities of grain, more than could be expected in a ration system (MAD 1, 2, 13 + 141, 15, 35, 76, 86, 91, 97, 99). Using the same system of prosopographic cross-reference, he argues that the texts of Group 2 record landholders receiving seed, feed, rations and draught animals in order to work their land. Similar to the findings presented above for Tell Suleimah, landholders also appear in the ration lists at Ešnunna, departing from the clear dichotomy in personnel categories maintained at Sargonic Gasur (Foster 1987b). Visicato follows B. Foster's general administrative model, positing that landholders gave a percentage of their harvest to the central institution as compensation for the use of animals and equipment. Additionally, he suggests that landholders were granted lands in return for a service, commonly assumed to be the burden of a public office (e.g. sukkal, šagina, ensi$_2$, etc.).

Next, Visicato addresses the small group of tablets referencing animal maintenance (MAD 1, 292, 306, 331). This group of texts is remarkable for both its consistent use of month names for dating the accounts and the very regular order of the disbursements and agents involved. Visicato notes the relationship of these accounts with others in the Ešnunna corpus through correlating personal names (1997: 252-253). Most notable is the co-occurrence of the buyer Eštar-nu'id, a balag-di (Akkadian: *ṣāriḫtum*; "lamentation singer (?)"), with the seller Tata in MAD 1, 303.

The final sub-archive within the Ešnunna corpus is similar in nature to Group 3; these eight texts (MAD 1, 5 + 117 + 133, 23, 102, 273, 284, 293, 295, 330) record animal fodder

distributed to a fixed set of individuals at regular rates, also regularly noted with a month at the close of the account.[237]

MAD 1, 102
obv.
1) 4(barig) še gu$_4$
2) [...] abba$_2$
3) [4(barig)] si-hur-saĝ
4) [4(barig)] da-di$_3$
5) [4(barig)] eš$_4$-tar$_2$-nu-id
6) [4(barig) ...]
7) [4(aš) 1(barig) še gur za-wi]
rev.
1) [2(barig) ^{d}utu-e$_2$]
blank space
2) ⌜lŠU+LAGAB⌝ 1(u) la$_2$ 3(barig) ⌜še⌝ [gur]
3) [iti] *gi-⌜um⌝*

MAD 1, 273
obv.
1) [4(barig) še gu$_4$]
2) ⌜abba$_2$⌝
3) 4(barig) da-di$_3$
4) 4(barig) ku-ru-ub-dingir-dingir
5) 4(barig) si-hur-saĝ
6) 4(barig) da-da
rev.
1) 4(barig) eš$_4$-tar$_2$-nu-id
2) 4(aš) 1(barig) še gur
3) za-wi
4) 2(barig) ^{d}utu-e$_2$
blank space
5) lŠU+LAGAB l 1(u) la$_2$ 3(barig) še gur
6) ⌜iti⌝ *i-ri$_2$-sa-at*

MAD 1, 293
obv.
1) 4(barig) abba$_2$
2) 4(barig) ku-ru-ub-dingir-dingir
3) 4(barig) si-hur-saĝ
4) 4(barig) da-di$_3$
5) 4(barig) da-da
6) 4(barig) eš$_4$-tar$_2$-nu-id
7) 4(aš) 1(barig) še gur
8) za-wi
rev.
1) [2(barig)] ^{d}utu-e$_2$
blank space
2) lŠU+LAGAB l 1(u) la$_2$ 3(barig) še gur
3) še gu$_4$
blank space
4) iti *ha-lu$_5$-ut*

MAD 1, 295
obv.
1) 4(barig) še da-di$_3$
2) 4(barig) si-hur-saĝ
3) 4(barig) da-da
4) 4(barig) ku-ru-ub-dingir-dingir
5) 4(barig) abba$_2$
6) 4(barig) ⌜eš$_4$-tar$_2$⌝-nu-id
blank space
rev.
1) 2(barig) ^{d}utu-e$_2$!(sa)
2) 4(aš) 1(barig) ⌜še⌝ gur
3) za-wi
blank space
4) lŠU+LAGAB l 1(u) la$_2$ 3(barig) še gur
5) 1(aš) iti *za-a$_3$-tum*

MAD 1, 330
obv.
1) 4(barig) [...] še ⌜gu$_4$⌝
2) da-da
3) 4(barig) PAP si-hur-saĝ
4) 2(aš) še gur ma-an-sa-nin-su
5) 4(barig) PAP da-di$_3$
6) 4(barig) ⌜PAP⌝ ku-ru-ub-dingir-dingir
7) 4(barig) PAP abba$_2$
8) 4(barig) PAP eš$_4$-tar$_2$-nu-id
9) 4(aš) 1(barig) še gur
10) za-wi
blank space
11) 2(barig) ^{d}utu-e$_2$
blank space
rev.
1) lŠU+LAGAB l [1(u)] 1(aš) 2(barig) še gur
2) [iti] ⌜*za*⌝-*a$_3$-tum*

These accounts are complemented by the summary account in MAD 1, 284.

[237] These individuals also appear together in MAD 1, 1 (i-zi-num$_2$, še-bi$_4$, si-ḫur-saĝ, ku-ru-ub-dingir-dingir, da-di$_3$, dingir-ki$_2$-ma-at, šu-ma-ma, zu-na-num$_2$, kir-ba-num$_2$, be-li$_2$-ur-saĝ, gala) and in the broken tablet MAD 1, 23 (da-di$_3$, ku-ru-ub-dingir-dingir, tu-na-ak-si-num, ^{d}utu-e$_2$).

MAD 1, 284

obv.	obv.
1) 4(barig) še gu$_4$	1) 240 sila$_3$ of barley for the oxen of
2) abba$_2$	2) Šībum,
3) 4(barig) si-hur-saĝ	3) 240 sila$_3$ (of barley) for Šī-šadi,
4) 4(barig) da-di$_3$	4) 240 sila$_3$ (of barley) for Dadi,
5) 4(barig) ku-ru-ub-dingir-dingir	5) 240 sila$_3$ (of barley) for Kurub-ilāni,
rev.	rev.
1) 2(aš) še gur za-wi	1) 2 gur measures of barley for Zawi,
2) še-ba 1(aš) iti	2) its ration is for one month;
3) 4(aš) še gur	3) 4 gur measures of barley for
4) da-da	4) Dada,
5) še-ba 5(aš) iti	5) its ration is for five months;
6) 1(aš) 3(barig) še gur eš$_4$-tar$_2$-nu-id	6) 1 gur and 180 sila$_3$ of barley for Eštar-nu'id,
7) še-ba 2(aš) iti	7) its ration is for two months.

This is a multi-month account to the same receivers of oxen fodder in the previously outlined accounts. However, the figure Utu-e is not included in this rendering of regular rations, suggesting that the small disbursement to Utu-e may have been a payment of a different kind. Despite Zawi's consistent receipt of 4 gur and 1 barig of barley in this account the allotment for one month is only recorded as 2 gur measures. The reason for this reduction is not forthcoming;[238] neither is the reason for Dada's rations being totaled across five months and Eštar-nu'id's for 2 months. The 4 gur accumulated over 5 months for Dada preserves the established rate of 4 barig per month as does the total for Eštar-nu'id.[239]

In sum, from his detailed analysis for a subset of self-contained corpora Visicato believes that the same central institution was involved in creating and maintaining the documents of both the Northern Building and the Private Houses. The range of activities presented in the archive includes textile industry, crafts, animal breeding and agricultural activities. Contrary to Gelb's

[238] It is possible that the še gu$_4$ ("animal fodder") in the previous accounts is not the same as še-ba ("rations") mentioned in this account.

[239] Additional accounts involving an Eštar-nu'id include MAD 1, 281 and the dated account MAD 1, 331 recorded in the same month as MAD 1, 273; however Eštar-nu'id's receipt of 5 gur measures exceeds that listed here in this account and must be unrelated to this series of texts.

identification of this central institution with the e_2-$geme_2$ ("household of female workers"), Visicato tentatively suggests a temple institution (Sumerian: e_2-dingir) (1997: 256). The absence of cultic activities is problematic for Visicato's view; his suggestion is no more convincing than Gelb's original interpretation. In addition to these local institutions, there is evidence of royal presence at the site, possibly altering the nature and function of the administration.

5.3. Geography

The texts from Ešnunna record an array of both known and unknown geographic toponyms. References to Mari and Šubur indicate the city's loose connection with the northern region of Mesopotamia;[240] similarly brief and scarce references to southern cities demonstrate a general association with Uruk and Irisagrig. Other toponyms suggest knowledge of the mountainous region of Simurrum, mentioned in one of Narām-Suen's year names. The references to the general northern land of Šubur involve sending trading agents (Sumerian: dam-gar_3; Akkadian: *tamkārum*) with amounts of silver, likely to be exchanged for elite or non-local goods.

Certain unlocated place names are referenced in other related corpora; for instance, Ariktin occurs several times in the Gasur texts (HSS 10, 35, 71, 203). Ardana is referenced only once (HSS 10, 153), but Maškan appears numerous times at Gasur (HSS 10, 20, 151, 152, 153, 195).[241] Aradana is included in a land sale document, where it is qualified as being "in/on the canal[?] Atli" (*in* pa_5 *atli*). The correlation of these place names in both Ešnunna and Gasur plausibly suggests that these cities lie between them, therefore to the north of Ešnunna.

[240] For the precise meaning and geographic scope of Šubur see Steinkeller (1998: 77).
[241] There are additional attestations of specific Maškan locales: Maškan-gal (HSS 10, 28, 42, 45, 47, 49, 87, 163), Maškan-tur (HSS 10, 26, 28 [both lexical],103) and Maškan-gibil (HSS 10, 41, 55).

Geographic locations only mentioned locally at Ešnunna include Dabal,[242] Halam, Ibrime,[243] Marrut and Sirim. These places engage in grain transportation with Ešnunna; in fact, Marrut appears to be in debt to the central institution of Ešnunna (MAD 1, 17). Dabal's mention in conjunction with Mari in an account of wooden objects[244] (MAD 1, 272) tempts me to suggest that this city was located to the north or west of Ešnunna, but this can hardly be certain. More helpful is the brief summary in MAD 1, 275, which records 6 gur measures of barley being received in Ešnunna and 1 gur measures of barley also in Dabal. The fact that this account was maintained at Ešnunna seems to indicate that the city could not have been located more than a few days' journey from Ešnunna.

Similar to Tutub's references to its neighbor Ešnunna, Ešnunna possesses a few accounts that include Tutub, which is part of the local grain trade evidenced throughout the Ešnunna corpus.[245] References to Ešnunna itself are relatively few, scattered throughout a handful of administrative and epistolary documents.

The toponym bad_3-an^{ki} has been equated with the important center of Dēr, strategically placed along the major north-south trade route (Sjöberg 1969: 131). A. Sjöberg describes its location as being on the Elamite borderland. The connection between Dēr and the Diyala sites is underscored by the presence of Ištaran, the patron deity of Dēr, in personal names at Tell Suleimah (AIHA 4, 6, 28).

The city of Ešnunna certainly maintained a relationship with Akkade based on both economy and ideology. A text from Girsu records an unidentified prince as holding the office of

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[242] But note the reference to i_7 *da-ba-al-*^{d}*a-ba*$_4$ ("Dabal of the Father/Ancestor Deity River") in ITT 5, 9253.
[243] And its variant ib-me-ri_2 in MAD 1, 50.
[244] The scarcity of wood in the region around Ešnunna is further hinted at by the annotation "forty-eight wooden objects Imutum carried to Ešnunna" in MAD 1, 318. Overall, there is a general paucity of wooden items in the local economy, which appears to be based on grains and textiles.
[245] MAD 4, 6.

governor (Sumerian: $ensi_2$; Akkadian: *iššiakkum*) in Ešnunna, similar to Nabī-ulmaš in Tutub and Lipit-ilī in Marada.[246] In more practical matters Ešnunna exchanged goods with the imperial capital, providing grain (MAD 1, 173) and rations for imperial servants (MAD 1, 334). But other than a handful of attestations, the details of the relationship between these two Akkadian urban centers remain opaque.

5.4. Tablet and Script

Overall, the preservation of the Ešnunna corpus is poor, with many fragmentary tablets. However, typical of the period the majority of texts are rectangular, single-column tablets devoid of sealings. There is nothing particularly distinctive about their shape and layout of the Ešnunna texts. Their paleography was treated together with all Classical period Diyala material in Gelb's MAD 2 sign list (1961: 220-235). Given the internal variation in paleography, often within one tablet (e.g. MAD 5, 68; Foster 1983a: 173; Yang 1989: 39), any claims about diagnostic sign forms are problematic within smaller corpora.

5.5. Terminology

The increased use of Akkadian in the northern sites of Mesopotamia yields Semitic lexemes, several of which appear to derive from an ill-defined *purussā'um* stem.

[246] ITT 5, 9253; and possibly Šū-megri as the governor of Mugdan (Foster 1982d: 37).

Transliterated Form	Normalized Form	Translation	Source
mu-ḫu-ra-um[247]	*muḫurrā'um*	"receivings"[248]	MAD 1, 268 and 323; OSP 2, 32
mu-ḫur-ra-um	*muḫurrā'um*	"receivings"[249]	MAD 1, 275
ḫu-lu-ka$_3$-um	*ḫuluqqā'um*	"losses"[250]	MAD 1, 21
ru-gu$_5$-ma-um	*rugummā'um*	"claims"[251]	OAIC 49
ku$_8$-sur-ra-im	*kušurrā'im*	"restitutions" or "transactions"[252]	MAD 1, 179
ku$_8$-su-ra-im	*kušurrā'im*	"restitutions" or "transactions"	MAD 4, 4; OAIC 4
u-ḫur-ra-um	*uḫurrā'im*	"remainder / arrears"[253]	MC 4, 72
u$_2$-kul$_2$-la-i$_3$-su	*ukullā'išu*	"his provisions"[254]	FAOS 19, Ki 2

Table 32: Semitic Vocabulary from the North

As noted by A. Poebel in his *Studies in Akkadian Grammar* (1939), this stem is mostly circumscribed to the Old Akkadian period.[255] He explains the derivation of this stem form as a more archaic instantiation of **pursûm*, a plural form of **pursum* (1939: xi and 140). The uncontracted plural form would therefore be *pursā'um*. Contextually, this form appears to qualify plural or collective items.[256] Poebel's derivation scheme proceeds as follows:

[247] The irregularity of plene orthography of geminated consonants in the Old Akkadian period is widely attested (Gelb 1955: 179).
[248] Poebel (1939: xi). Gelb's translation as "receipt" does not capture the plurality of the stem (1961: 155).
[249] Poebel (1939: xi).
[250] Poebel (1939: xi). W. von Soden refines this meaning in his study on the *qutullā'* form, arguing this type of loss is semantically linked with movable goods shipped between centers; in prayers the connotation of *ḫuluqqā'um* is linked with continuous losses (1939: 205).
[251] Hasselbach (2005: 188) and Gelb (1955: 314). von Soden prefers to render this word as "Inanspruchnahme, Vindikation," which allies itself more closely with a legal absolution (1939: 200).
[252] There are two contradictory derivations here; R. Hasselbach prefers to attribute this lexeme to the root QSR, which she leaves unexplained (i.e. absent in her glossary) (2005: 188). I can only guess that she is linking this word to the Hebrew root QŠR "to bind," suggested by Gelb (1955: 288). However, the presence of several finite verbal forms of KŠR in the Diyala and Gasur corpora would not support an aberrant QSR root. Gelb himself prefers to attribute this stem to KŠR "to reinforce." His translation of "transactions" seems bland considering the unique circumstances of the lexeme.
[253] Steinkeller and Postgate (1992: 108).
[254] Hasselbach's translation of this term is in the singular (2005: 188). Here it is translated in the plural to avoid confusion since terms translated collectively appear singular out of their context.
[255] Poebel notes rare occurrences in the Old Assyrian dialect (1939: xi). To this von Soden adds several later examples (1939; 1946: 423-426).
[256] This distinction appears to be lost in the subsequent Old Assyrian dialect (e.g. CCT 3, 26b) (Poebel 1939: xii).

pərus- (infinitive form) → *purusûm → *purussûm → purussā'um

This paradigm lacks any explanation; Poebel does not explicate his grammatical scheme, which subsequently does not inspire confidence in its validity. von Soden's grammatical exposition offers parallel evidence, culled almost exclusively from second millennium sources. Through his collected examples of *purussā'um* nominal forms, he shows that this stem was often used in a similar manner to the abstract nominal form *pirsum* (1939: 200). Semantically, von Soden asserts that the *purussā'um* formation is an abstract deverbal form expressing the execution of an activity that was scheduled at specific times or intervals, which can be marked by entry into a state, such as being friendly or healthy. He also notes that only active transitive verbs may create the *purussā'um* form (1939: 204-205).

The actual form of the stem is more difficult to explain; von Soden links the *purussā'um* form with the broken plural phenomenon in Semitic languages (1946: 425). However, he is only able to confidently identify one parallel form in Arabic and concedes that examples from Syriac probably originated with a distinct Aramaic stem (1946: 426). In summary, the novel Akkadian *purussā'um* nominal formation can only be derived from active-transitive verbs into an abstract meaning that is linked with the performance of a set action with a sensitivity to the exact timing of the action, at least in second millennium sources.

In the Old Akkadian period, the contextual evidence supports Poebel's original suggestion that the stem denotes plurality. Additionally, all identified forms in the Sargonic period do originate from active-transitive verbal roots. Related to the *kašārum* root are several finite verbal forms found only in texts from the Diyala and Sargonic Gasur during the Old Akkadian period.

Transliterated Form	Normalized Form	Translation	Source
ik-sur	*ikšur*	"He replaced."	OAIC 36
ik-su$_4$-ra	*ikšura*	"That he replaced."	OAIC 36
ik-su-ra	*ikšura*	"… replaced."	OAIC 14
a-ka$_3$-sa-ar	*akaššar*	"I will replace."	FAOS 19, Ga 3

Table 33: Forms of *kašārum*

Despite some of the more problematic Semitic vocabulary, the corpus at Ešnunna includes many of the established terms for generic bookkeeping procedures. From MAD 1, 2, which is unfortunately too fragmentary to reconstruct the exact transactions, we see a bipartite division of barley according to taxed and tax-free allotments. The account summary reads:

> 2(ĝeš$_2$) 3(u) ˹še˺ [gur] *šu ba-sa$_3$-ri$_2$-˹im˺*
> 150 gur measures of barley, which is tax-free;
>
> 2(ĝeš$_2$) 2(u) 3(aš) 3(barig) še gur *šu ši-ib-ši-im*
> 143 gur measures and 3 barig of barley, which is taxed.

G. Visicato suggests the translation "tax-free" for the term *pašārum*, following *AHw* (1999: 246, fn. 33). Evidence from subsequent periods of Mesopotamian administrative history seem to secure the interpretation of *šibšum* as a type of tax (see CAD 17/1 [1989]: 383-386). Mathematically, however, the totals included in these two categories are substantially less than that listed in the full account. This brief section must be qualifying a subset of entries or perhaps even the single entry of a prosperous individual.

In the closing line of the account is a partially preserved amount of barley reckoned as the gur *si-da-ru*. This adjectival form contextually lends itself to the interpretation as "extra" deriving from *watārum* (Visicato 1999: 247-249).[257] However, this is significantly more difficult to support grammatically. An alternative suggestion, offered by Visicato, is that the root is *šaṭārum* (1999: 248); in this paradigm, the underlying nominal pattern is most likely *pirās-*.[258]

[257] This interpretation becomes even more appealing in light of the use of the gur diri in MVN 3, 38 from the Diyala.
[258] This form is attested already in the Old Akkadian period (see Hasselbach 2005: 188).

The precise meaning of this stem is uncertain, however, it is attested in many basic lexemes: *imērum* "donkey," *zikārum* "man," *lišānum* "tongue."[259]

In the account three individuals are noted as having both regular measurements of barley and *si-da-ru* measurements of barley. Their entries read as follows:

2(ĝeš$_2$) še gur 3(ĝeš$_2$) še gur *si-da-ru* lPU$_3$.ŠAl-ru-um
3(u) la$_2$ 2(aš) še gur 2(ĝeš$_2$) 2(u) 2(aš) še gur *si-da-ru* mu-mu
1(ĝeš$_2$) še gur 1(ĝeš$_2$) ⌜2(u)⌝$^{?}$ [... še] gur [*si-da-ru*]

I speculate that Mumu's entry may be related to that recorded in MAD 1, 97, where Mumu's entry follows the broken entry of Puzurum. In this text Mumu receives 180 gur of barley, an amount close to the total of both his še gur and še gur *si-da-ru* in MAD 1, 2. However, Visicato's postulation that the final line of MAD 1, 2 is a summation of the previous three entries of gur *si-da-ru* is mathematically plausible, but impossible to prove given the fragmentary state of the tablet.

More familiar accounting terminology is preserved in MAD 1, 105.

MAD 1, 105	
obv.	obv.
1) [...]-⌜lam⌝	1) ...
2) ⌜si⌝-tum	2) is the carried-over debit,
3) *in* gal-zu-zu	3) in (the account of) Galzuzu,
4) ⌜*ba*⌝-*si-um*	4) it is extant.
rev.	rev.
1) *ḫu-bu-lum*	1) It is a loan.

This account explicitly links together the situm (Akkadian: *šittum*) and the *ḫubullum* as vocabulary of debit.[260] The use of *ḫubullum* to express a loan from the central institution is prevalent throughout the Old Akkadian corpus in the northern region (Gasur, Ešnunna, umm el-Jir). However, the use of the Sumerian term (ur$_5$) does not appear in complementary distribution.

[259] See GAG §55 7a and 12a for a complete list of this nominal form.
[260] Similarly TCBI 2/1, 52 from umm el-Ḥafriyat also uses both these terms in conjunction to express a running debt in an individual's account.

As previously mentioned, the preferred use of Sumerian over Akkadian at Tell Suleimah, a site further removed from the Sumerian-speaking heartland than Ešnunna, is puzzling. Otherwise, there is only a smattering of attestations, also predominantly from central and northern sites (Gasur, Nippur, Adab). From this distribution, it appears that framing an individual's debt as a loan was a feature peculiar to the northern administrations.

Related to the running debits of workers and professionals is the account MAD 1, 86, which is a record of the remaining debit of the farmers (la_2-ia_3 engar-engar) (Englund 1990: 26-27). The entire account is reckoned in barley measures, so it is not possible to reconstruct how much seed, feed, etc. that the farmers received from the central institution. Without patronyms it is difficult to assess whether farmers also received rations. While several names appear in both types of texts, the high level of potential haplonomy at Ešnunna precludes any conclusion.[261]

5.6. Metrology

The fragmentary state of many of the Ešnunna texts prohibits a full understanding of the metrology system (e.g. MAD 1, 22); however, certain observations can be made. Similar to the other reviewed Diyala corpora, Ešnunna appears to follow the generic metrology for area and weight, showing no deviations from the widely accepted Mesopotamian systems. It is in the capacity system that we see the two distinct Mesopotamian systems at odds. Despite Ešnunna's assumed proximity to Akkade and the established presence of certain royal personages in the city the predominant capacity measure is the gur $saĝ$-$ĝal_2$,[262] not the gur *Akkade*.[263]

[261] I maintain slightly more skepticism than Visicato in his analysis of his Group 2.
[262] Occasionally abbreviated gur $saĝ$ (e.g. MAD 1, 28).
[263] It is tempting to see the use of the gur *Akkade* in texts that regularly implement 2 barig 3 ban_2 (= 150 $sila_3$) as a neat half gur.

In an interconnected series of tablets, the use of the gur *Akkade* is made explicit by the regular notation 4 barig (= 240 $sila_3$), which precludes this amount being used as the bundling unit (MAD 1, 102, 273, 284, 293, 295, 330). This related subset of texts records barley disbursements for cattle fodder (Sumerian: še gu_4). These seven monthly accounts are relatively static, always involving the same set of agents and amounts of barley. The agents themselves appear to be locally important. Dadi may be the scribe referenced in MAD 1, 319; Šī-šadi merits the titles "my lord" (Akkadian: *bēlī*) and "my father" (Akkadian: *abī*) in a local letter (FAOS 19 Eš 6). The figure of Eštar-nu'id appears alongside Tūta-šar-libbīš, either the namesake of Šar-kali-šarrī's wife or the person herself, and Tašqītum, a balag-di (MAD 1, 331).[264] Additional inferred use of the imperial gur appears in MAD 1, 319, which involves various locally prominent individuals.[265]Other occurrences of this larger size gur can be deduced from simple calculations.

MAD 1, 292

obv.	obv.
1) [1(u)] ⌜1(aš)⌝ še gur [saĝ]-⌜ĝal$_2$⌝	1) 11 saĝĝal gur measures of barley,
2) [si]-la-ba-⌜at⌝	2) for Šī-labat;
3) 1(aš) 1(barig) su-ba-⌜ri$_2$-tum⌝	3) 1 1/4 (saĝĝal gur measures of barley for) Subarītum;
4) 1(aš) 1(barig) ta-ta	4) 1 1/4 (saĝĝal gur measures of barley for) Tata;
5) ⌜1(aš) 1(barig)⌝ da-aš$_2$-gi-⌜tum⌝	5) 1 1/4 (saĝĝal gur measures of barley for) Tašqītum;
6) 1(aš) 1(barig) tu-⌜da⌝-šar-li-bi$_2$-iš	6) 1 1/4 (saĝĝal gur measures of barley for) Tūta-šar-libbīš;
7) 1(u) udu 1(aš) [^{m}aš$_2$-gar$_3$]	7) 10 sheep and 1 female kid,
8) še-ba 2(aš) 1(barig) [še gur]	8) (monthly) rations: 2 1/5 gur measures of barley;
9) 2(u) [la$_2$ 1(aš) amar nita]	9) 19 young bull calves,
10) še-ba 2(aš) la$_2$ 3(ban$_2$) [še gur]	10) (monthly) rations: 1 9/10 gur measures of barley;
rev.	rev.
1) ⌜3(aš)⌝ [...] šah$_2$	1) 3+ pigs
2) še-ba 1(aš) 2(barig) 3(ban$_2$) še gur	2) (monthly) rations: 1 1/2 gur measures of barley;
3) 6(aš) še gur saĝ-ĝal$_2$ *šu sa-bu-ul-ti* ⌜še⌝	3) 6 saĝĝal gur measures of barley, which were exchanged for the barley
4) *ši* dingir-na-zi-ir	4) of Ilum-naṣir;
5) lugal-ezen ⌜*im*⌝-*ḫur*	5) Lugal-ezen received it.
6) 1(barig) *a*-⌜*na*⌝ [...] gur	6) 1/5 gur measure of barley for ....
blank space	*blank space*
7) |ŠU+LAGAB| 2(u) 2(aš) še gur saĝ-ĝal$_2$	7) total: 22 saĝĝal gur measures of barley;
8) |ŠU+LAGAB\] ⌜6(aš)⌝ la$_2$ 1(barig) še gur	8) total: 5 4/5 gur measures of barley;
9) [iti] ⌜*gi-um*⌝	9) month: *Gi'um*.

[264] Līpuš-iā'um, daughter of Nabī-ulmaš and consequently the granddaughter of Narām-Suen, was a balag-di at Tutub.

[265] The remaining attestations are too broken to retrieve a full understanding of the agents and actions recorded (MAD 1, 28, 271, 320).

The amounts issued to the female agents are reckoned exclusively in the smaller 240-sila$_3$ gur while the amounts of fodder given to the small groups of domesticated animals are tabulated in the 300-sila$_3$ gur.[266] This same pattern extends to the two other related accounts.

MAD 1, 306	
obv.	obv.
1) 1(aš) 1(barig) še gur saĝ-ĝal$_2$	1) 1 1/4 saĝĝal gur measures of barley,
2) ba-ba	2) for Baba;
3) 1(aš) 1(barig) su-ba-ri$_2$-tum	3) 1 1/4 (saĝĝal gur measures of barley for) Subarītum;
4) 1(aš) 1(barig) si-la-ba-at	4) 1 1/4 (saĝĝal gur measures of barley for) Šī-labat;
5) 1(aš) 1(barig) tu-da-šar-li-bi$_2$-iš	5) 1 1/4 (saĝĝal gur measures of barley for) Tūta-šar-libbīš;
6) 2(u) la$_2$ 1(aš) amar nita	6) 19 young bull calves
7) 2(aš) la$_2$ 3(ban$_2$) še gur	7) (monthly ration:) 1 9/10 gur measures of barley;
rev.	rev.
1) 1(u) 2(aš) udu 1(aš) ^{m}aš$_2$-gar$_3$	1) 12 sheep and 1 female kid,
2) 1(aš) 1(barig) 1(ban$_2$) 5(diš) sila$_3$ še gur	2) (monthly ration:) 1 1/4 gur measures of barley;
blank space	*blank space*
3) lŠU+LAGABl 5(aš) še gur saĝ-ĝal$_2$	3) total: 5 saĝĝal gur measures of barley;
4) lŠU+LAGABl 3(aš) 4(ban$_2$) 5(diš) sila$_3$ še gur	4) total: 3 3/20 gur measures of barley;
5) 1(diš) iti *i-ri$_2$-sa-at*	5) month: *Irisat*.

The animal fodder rates detailed in these accounts are relatively static with sheep receiving 60 sila$_3$/month, pigs 150 sila$_3$/month and bull calves 30 sila$_3$/month. These rates are comparable to those recorded in BIN 8, 122 rev. i 6'-7', which also issues 150 sila$_3$/month to pigs. However, the sheep fodder rations attested in both BIN 8, 131 obv. ii 6'-7' - rev. i 1 and BIN 8, 122 rev. i 4'-5' are only 30 sila$_3$/month. This reduced fodder rate is also seen in MAD 1, 306 and 331 from Ešnunna suggesting that the larger ration of MAD 1, 292 is anomalous.

[266] Moreover, the infrequent use of the 4-barig notation, which implies the use of the imperial measure can co-occur with the gur saĝ-ĝal$_2$ in the same account (e.g. MAD 1, 28 and 287).

MAD 1, 331

obv.	obv.
1) 1(aš) 1(barig) še gur saĝ-ĝal$_2$	1) 1 1/4 saĝĝal gur measures of barley,
2) su-ba-ri$_2$-tum	2) for Subarītum;
3) 1(aš) 1(barig) da-aš$_2$-gi-tum	3) 1 1/4 (saĝĝal gur measures of barley for) Tašqītum;
4) 1(aš) 1(barig) ta-ta	4) 1 1/4 (saĝĝal gur measures of barley for) Tata;
5) 1(aš) 1(barig) tu-da-šar-li-bi$_2$-iš	5) 1 1/4 (saĝĝal gur measures of barley for) Tūta-šar-libbīš;
6) ⌜5(aš)⌝ še gur	6) (total:) 5 gur measures of barley
7) [eš$_4$]-tar$_2$-nu-id	7) Eštar-nu'id;
8) 1(u) 2(aš) udu 1(aš) ^{m}aš$_2$-gar$_3$	8) 12 sheep and 1 female kid,
9) še-ba 1(aš) 1(barig) 1(ban$_2$) 5(diš) sila$_3$ še gur	9) the ration is 1 1/4 gur measures of barley;
rev.	rev.
several lines missing	several lines missing
1') [n še gur] ⌜saĝ⌝-ĝal$_2$	1') [n] saĝĝal gur measures of barley;
2') [...]	2') ...
3') dam da-⌜da⌝	3') the wife of Dada.
blank space	*blank space*
4') [iti *ḫa*]-⌜*lu*$_5$⌝-*ut*	4') [month:] *Ḫalut*.

Many of the same agents are involved in this series of accounts, receiving what appears to be a fixed ration amount. It is interesting to note that they receive 300 sila$_3$, but instead of rendering the account using the imperial standard, which bundles at 300 sila$_3$, the scribes purposefully utilize the more local saĝ-ĝal$_2$ measure.[267] One possible interpretation for this pattern is the imperial interest in small cattle in the region, which may suggest imperial management of the sheep and goat herds, while personnel were paid by the local government as a courtesy (coerced or otherwise) to the Akkadian Empire.

Contemporary evidence from other sites regarding the reckoning of plow animal rations indicates a clear dichotomy between the north and south. At Umma, oxen rations are measured in the gur saĝ-ĝal$_2$,[268] but at Gasur and Ešnunna the larger gur maḫ or gur *Akkade* is used. Additionally, in BIN 8, 136, barley for pigs is rendered in the gur saĝ, but all dabin entries are in the gur saĝ-maḫ. Given the dominance of the larger 300-sila$_3$ gur in the northern region, it

[267] The implied use of the imperial gur in the personal letter MAD 1, 290 offers insight into the preferences of private industry.

[268] See AAS 1, MC 4, 35, MCS 9, 238 and USP 22 for the southern sites and HSS 10, 98 and 103, MAD 1, 102, 273, 284, 293 and 330 for the northern sites. The examples from Sagub are conflicting utilizing the gur mah and gur saĝ-ĝal$_2$. This may be due to the estate's dual role as both local liaison and royal center.

is likely that this was their local unit, not created, but merely promoted in Narām-Suen's Reforms. This strongly suggests that field preparation and planting were left to the local administration; the Akkadian kings were more interested in the yield and finished products.

There is no parallel evidence from Ešnunna that allows a comparison between land values and precious metals. In a collection of fragments amassed under the title OIP 104, 44, there are equivalencies between land values and grain occasionally combined with precious metals. While the 1:1 relationship between the gur saĝ-ĝal$_2$ and the silver shekel is maintained, the price of land fluctuates. This could be explained by varying qualities of land and the extent and state of their irrigation networks.

12 iku = 8 še gur, 100 sila$_3$
6 1/5 iku = 18 še gur saĝ-ĝal
30 iku = 10 gin$_2$ ku$_3$-babbar, 15 še gur
18 iku = 10 še gur (= 10 gin$_2$ ku$_3$-babbar)
18 iku = 12 še gur

From *JCS* 26, 8 (Westenholz 1974) we can observe the following prices for cattle at Ešnunna:

1 ab$_2$ = 5 gin$_2$ ku$_3$-babbar
10 u$_8$ udu = 10 gin$_2$ ku$_3$-babbar

These prices are comparable to those from Sippar cited in CT 50, 80: 1 amar gu$_4$ = 6 gin$_2$ ku$_3$; but cheaper than equivalencies found at Tell Suleimah.

In the texts cited above are certain month names that are clearly Semitic; these names are agricultural, devoid of divine figures or festivals.[269] The specific months mentioned at Ešnunna indicate that their calendar was part of a broader early Semitic calendar already in use during the ED IIIb period at Ebla and Mari.[270] There are two separate groups of texts that appear to have sequential accounts:

[269] The accounts that are dated with a specific month name predominantly address fodder for animals and rations for workers and personnel.
[270] The months *za-a$_3$-tum* and *i-si* are already seen in the ED IIIa corpus at Abu Ṣalābīkh.

Text Group	Month Names
MAD 1, 292, 306, 331	*gi-um, ḫa-lu$_5$-ut, i-ri$_2$-sa-at*
MAD 1, 102, 273, 284, 293, 295, 330	*za-ʿa$_3$-tum, gi-um, ḫa-lu$_5$-ut, i-ri$_2$-sa-at*

Table 34: Month Names at Ešnunna

M. Cohen has compiled various sources for the third millennium Semitic calendar, predominantly based on the Ebla material (1993). Several Semitic month names attested in the Diyala and southern Mesopotamia are not known from Ebla, but are likely simple substitutes into the general order of the Ebla calendar.[271] From Mari 5, 9 the order *za-lul, i-ri$_2$-sa,* |MAxGAN$_2$ᵗᴵ|-ugur$_2$, *iq-za* is implied, which contradicts the general order established for Ebla in Cohen (1993).[272] Additionally, Mari 5, 1 records the following sequence: i$_3$-nun-na, *i-ri$_2$-sa*, |MAxGAN$_2$ᵗᴵ|-ugur$_2$, *iq-za*, which also suggests that the month *i-ri$_2$-sa* followed *za-lul* and i$_3$-nun-na. The partially broken text, Mari 5, 7, preserves the sequence: |MAxGAN$_2$ᵗᴵ|-saĝ, [|MAxGAN$_2$ᵗᴵ|], …, *gi-um, ha-li,* i$_3$-nun-na.

Ebla Calendar	Ešnunna Calendar	Mari Calendar	Translation[273]
za-ʿa$_3$-tum	*za-ʿa$_3$-tum*		flocks
gi-um	*gi-um*	*gi-um*	measuring? heat?
ḫa-li(-da)	*ḫa-lu$_5$-ut*	*ḫa-li*	?
i-ri$_2$-sa$_2$	*i-ri$_2$-sa-at*	*i-ri$_2$-sa*	sowing? cultivation?
ga-sum			shearing? rains?
i$_3$-nun-na		i$_3$-nun-na	ghee
za-lul		*za-lul*	procession?
i-ba$_4$-sa			anointing?
|MAxGAN$_2$ᵗᴵ|-saĝ	ba-ḫi-ir *ma(-aḫ-ri)*	|MAxGAN$_2$ᵗᴵ|-saĝ	early heat
|MAxGAN$_2$ᵗᴵ|-ugur$_2$	ba-ḫi-ir egir (*warkî*)	|MAxGAN$_2$ᵗᴵ|-ugur$_2$	late heat
i-si			fires?
iq-za		*iq-za*	cold? end?

Table 35: Comparison of the Ebla and Ešnunna Calendars

With such uncertain translations of individual month names it is difficult to reconstruct seasonal activities. Yet, drawing from the broader context of herding patterns it is possible to

[271] The Sargonic calendar from Adab, as reconstructed by Z. Yang, is not useful for comparison here (1989: 56).
[272] This order is support, in part, by Mari 5, 8 and 12.
[273] The translations follow those compiled in Cohen (1993: 25-29).

posit a partial reconstruction. In the summer months the sheep are removed to higher altitudes away from the cities of Ešnunna and Tutub. Conversely, in the winter months after the previous harvest was gathered and processed and before the new crop was planted in the fall, the sheep and goats are brought back down. Therefore, with the regular mention of providing small cattle with fodder it may suggest that the months mentioned in their accounts (*za-'a$_3$-tum*, *gi-um*, *ḫa-lu$_5$-ut* and *i-ri$_2$-sa-at*) are part of the spring season.

5.7. Prosopography

Being the largest corpus in the Diyala region, Ešnunna offers the fullest network of individuals across multiple strata of society. The more detailed prosopographical discussion given below is relegated to offices and individuals that interact with the upper-levels of the administration—both local and imperial. Therefore, laborers, weavers, craftsmen, etc. are omitted from this particular discussion. This is not because they are uninteresting, but because they are outside the direct line of inquiry of this specific dissertation.

5.7.1. The Royal Family

The presence of a royal family member at Ešnunna is partially preserved in a text from Girsu, which reads in part: […] dumu lugal ˹ensi$_2$˺ iš-nun-na^{ki}-ka / [PN] the son of the king (is) governor of Ešnunna (ITT 5, 9253). Unfortunately, the name is not preserved. However, in an unexcavated text from Ešnunna the figure Enbiq-ḫaniš is recorded as being the governor of Ešnunna (ensi$_2$-*ke* iš-nun^{ki}).[274] This same document also offers a possible synchronism within the archive; following Enbiq-ḫaniš, after several broken lines, is the scribe Ṭāb-siga also mentioned in MAD 1, 321.

[274] UCP 9-2-1, 83.

Additional evidence of the royal family at Ešnunna is the mention of a Tūta-šar-libbīš in several administrative accounts disbursing significant amounts of grain to several female agents. While the problem of homonymy cautions against unjustified correlations, the context lends support to the interpretation of this Tūta-šar-libbīš as the (future) wife of Šar-kali-šarrī. Her name is exceptional in the Old Akkadian corpus and her status implied by her role in these documents lends itself to the interpretation of an elite figure, who would marry the future king (Westenholz 2009: 65).

5.7.2. dam-gar$_3$

Texts that mention the activities of the various trading agents (Sumerian: dam-gar$_3$; Akkadian: *tamkārum*) at Ešnunna are associated with both the Northern Building and Private Houses, possibly highlighting their ambivalent position within both the public and private administration. In general, these trading agents receive amounts of grain or silver that is exchanged for more refined commodities, such as aromatics.[275] There is some indication that trading agents interact on the state level; Nabī'um receives a moderate amount of grain that is destined for the servants of Akkade, connoting travel and trade between Ešnunna and Akkade. Ikūnum receives a small amount of silver to deliver to the northern region of Šubur. Both of these pathways support the general northern orientation of the Diyala sites.

Insofar as is detectable, the trading agents operate in the gur saĝ-ĝal$_2$, not the imperial gur. This is suggestive; as postulated for the following Ur III period, these trading agents operated as independent agents. During the Akkadian period, with competing capacity systems,

[275] Occasionally, these are extremely large amounts of grains. In MAD 1, 18 La'ebum receives 553 gur, which would support 185 male workers for one year at the standard ration rate.

these traveling agents could retain their preference for the gur saĝ-ĝal$_2$ as seems to be customary at Ešnunna.[276]

5.7.3. Landowners

A handful of records detail a small group of individuals that owned, or at least controlled, land in Ešnunna. Unfortunately, many of the records are fragmentary, prohibiting a recovery of useful data. This obstacle is compounded by homophony in personal names, which prevents confident assertions about the activities of landowners to be made. However, some few observations can be articulated.

The šabra administrator held land as evidenced in records for Ilul-ilum, although Ida-ilum and Ilum-palil are also known šabra s from Ešnunna. Ilul-ilum's land holdings were probably tied to his office as one text lists the "field of the household's šabra and suḫuš-*nu*" totaling 5 bur$_3$ (≈ 32.5 ha.). Other individuals mentioned as possessing land parcels are Šū-ilīšu, possibly affiliated with the galla office, and Išārum, a scribe. Šū-ilīšu holds 6 bur$_3$ (≈ 39 ha.) in MAD 1, 126 and 5 bur$_3$ in MAD 1, 332. The seed he receives in MAD 1, 329a equaling 6 gur would only suffice to seed 1 1/3 bur$_3$ of land according to B. Foster's seed rate established in the Gasur texts (1987: 93). Išārum, likely the scribe mentioned in MAD 1, 322, owns both a 2 bur$_3$ parcel recorded in MAD 1, 332 and a 3 bur$_3$ allotment mentioned in MAD 1, 2. This complements his receipt of 5 gur of seed.

5.8. Collocation Results

As mentioned at the opening of this section, a deeper investigation into the spheres of activity of the Northern Building and the Private Houses is necessary to gain a fuller picture of the overall administrative structure at Ešnunna. Moving beyond a simple comparison of the

[276] This preference could be motivated by the local metrology of the foreign city with which the dam-gar$_3$ traded. The use of the smaller metrology unit here does not necessarily imply it was Ešnunna's local preference.

abbreviated word frequency lists presented at the beginning of this section, an evaluation using keyness criteria can assist in isolating specific lexemes that define one corpus against another. Following the procedure outlined in Chapter Two, the two separate corpora were compared, returning quantified measures of particularly common or uncommon words in each archive. The results are summarized below inclusive of results above the critical value of 15.13 (99.99%).

The first table is an assessment of distinguishing lexemes in the Private Houses archive. Using the Northern Building archive as the reference corpus, the transliterations of the nine private houses texts were compared; the software identified specific words in the Private Houses texts that were unexpectedly frequent (positive values) or infrequent (negative values) using the Northern Building texts as the referent.

The smaller size of the Private Houses archive naturally lends itself towards more iconic language, since the larger the size, the higher the chances of basic words appearing in a Mesopotamian archive. Regardless, however, the Private Houses still demonstrate a proclivity towards land tenure, trade, movement and increased Semitic lexemes. At the same time, the Private Houses show an aversion to grain, which is a staple product omnipresent throughout most Mesopotamian archives of the period. Therefore, the distinction of the Private Houses is its focus on finished (e.g. tug_2 "garment") and land mensuration.

Keyness Rank	Raw Frequency	Keyness Measurement	Term	Translation
1	10	57.23	$eš_2$-gid_2	Surveyor
2	8	45.78	gi	Reed
3	7	30.76	tug_2	Garment
4	4	22.86	mar	West
5	10	18.86	*a-na*	To/for
6	4	18.00	u_5	South
7	3	17.17	*im-ḫur*	He received (it)
8	3	17.17	*iṭ-bu-ḫu*	They slaughtered
9	3	17.17	$kuš_3$	~ 50cm
10	3	17.17	mer	North

Table 36: Private Houses Texts Compared Against the Northern Building Texts

The same procedure was used to calculated those terms that were iconically typical (positive values) or atypical (negative values) in the Northern Building corpus, using the Private Houses texts as the reference corpus.

Keyness Rank	Raw Frequency	Keyness Measurement	Term	Translation
1	343	14.08	še	Barley
1 (Negative)	2	30.76	tug_2	Garment
2 (Negative)	24	18.86	*a-na*	To/for
3 (Negative)	1	18.00	u_5	

Table 37: Northern Building Texts Compared Against Private Houses Texts

The second comparison hones in on the key points of statistical difference between these two archives: the Northern Building's propensity towards grain production/management and the Private Houses' tendency towards land mensuration, most likely in the context of sales and purchases, and towards finished garments. This demonstrates the Northern Building's close association with the considerable tracts of land and the sizable labor force necessary for large-scale grain production. This is further supported by the fact that the larger plow animals (gu_4 and anše) only appear in the Northern Building archive.

5.9. Chapter Summary

Similar to the other Diyala sites, Ešnunna operates predominantly in the northern areas of Mesopotamia with limited interaction in the Mesopotamian heartland. Through the

administrative apparatus housed in the Northern Building, a centralized entity controlled large tracts of land and the commensurate grain production, which supported local workers. Conversely, the Private Houses engaged in the trade of finished and luxury goods through the local damgars. The northern trade routes radiating out from Ešnunna were certainly one of several attractions for the royal family.

Despite the presence of the imperial administration through the standardized dating system, paleography and metrology, Ešnunna still retained certain local idiosyncracies in its daily administration. Through the regular application of the gur *Akkade* for measuring animal fodder, Ešnunna distinguished itself from other Mesopotamian cities under the rule of the Akkadian kings.[277] Combined with the observed local practices of distinguishes between loans and sales in the metrology at Tell Suleimah, these particularisms begin to imply that in this peaceful area there was a significant degree of variation. This constrasts with a top-down view of universal imperial standardization across Mesopotamia at this time.

[277] Gasur also uses the gur *Akkade* for animal fodder (e.g. HSS 10, 65); however, as demonstrated by HSS 10, 103, the scribes at Gasur do not distinguish between humans and animals in their applied metrology even within the same text, as the scribes at Ešnunna do.

Chapter Six

6.0. "Diyala" Corpus

Since I. J. Gelb's publication of MAD 1, several smaller caches of irregularly excavated cuneiform tablets have been published. Those included in this study number 81 individual tablets. Typically, the association of these unprovenienced texts with the Diyala region is based on prosopography, paleography or particular vocabulary. This collection of individual correlations is helpful, but, with the growing ability of new text-based technologies, we are able to begin comparing the broader content, inclusive of personal names, vocabulary and local economic preferences. Not only does an electronic tool set allow the comparison of larger text corpora, but it also calculates levels of statistical significance that would be otherwise very time-consuming.

As in the previous sections of this chapter, included below is a summary list of the most prevalent lexemes throughout the patchwork of the irregular Diyala corpus.[278] This table portrays an economy focused on grain production and/or management, but also land ownership and the production of finished goods. Similar to Tutub, the scribes of these documents employed the PAP notation in unclear contexts, and overall the absence of verbs is striking. The Akkadian usage is primarily relegated to the use of prepositions. This gives the impression of very abbreviated documents, possibly preliminary accounts.

Rank	Raw Frequency	Word/Lexeme	English Translation
1	93	še	Barley
2	72	gur	Capacity measure
3	48	*a-na*	To/For
4	47	*šu* (all variants)	Of
5	39	dumu (all variants)	Son
6	29	tug_2	Garment

[278] See Table 8 for a complete list of unexcavated Diyala texts.

7	28	gin_2	~8.33 g
8	21	u_3	And
9	20	ku_3-babbar	Silver
10	20	$abba_2$	Elder
11	20	e_2	House
12	17	PAP	--
13	16	udu	Sheep
14	14	|ŠU+LAGAB|	Total
15	13	dabin	Semolina
16	13	GAN_2	Field
17	13	im	North/wind/clay (tablet)
18	12	*in*	In
19	12	gu_4	Oxen
20	12	sa_{10}	Exchange
21	12	gi	Length measure
22	11	iri	City
23	11	$eš_2$-gid_2	Surveyor
24	10	zu-zu	Personal name
25	10	$ARAD_2$	Servant

Table 38: Word List for Unprovenienced "Diyala" Texts

6.1. Previous Scholarship

Gelb published a small collection of 53 Old Akkadian texts purchased by the Chicago Field Museum by way of Britain's Lt. Col. J. H. Patterson, who obtained the small collection of tablets in Iraq shortly after the end of World War I. Since Gelb's publication of the known Ešnunna material in the 1950s, various, smaller collections of unprovenienced texts have appeared. Their attribution to the site of Ešnunna is conjectural based on the co-occurrence of personal names, orthographic choice, paleography or toponyms.

Additionally, there is an unpublished text in the Hearst Museum of Anthropology at the University of California-Berkeley from Abu Jawan (HMA 9-1900). The script and tablet shape situate this text in the Classical period, after the Reforms of Narām-Suen. However, the account is written in Sumerian and five of the seven personal names are Sumerian as well. Following my comments in Chapter Two, I would also tentatively assign those Old Akkadian texts published

by H. Lutz in UCP 9/2, 76, 83 and 89 to the Diyala based on the collection's acquisition history.[279]

Various other tablets have been published in *Journal of Cuneiform Studies* (*JCS*), FAOS, *Aula Orientalia* (*AuOr*), CUSAS , MAD 4, MC 4, MVN 3, *Orientalia* (*OrNS*), and SAKF. For a complete listing, inclusive of personal letters and legal texts, see section 2.4.1. As with the previous corpora in this chapter, only those texts attributable to the Classical period and of the administrative genre are included here.

6.2. Geography

This conglomeration of texts from the Diyala region possesses few geographic markers, however some few texts make mention of Akkade and the Tigris River, which pairs with the linguistic and onomastic evidence to situate these tablets in the northeast region. Within the archive of Ginunu the wall of Akkade (bad_3 *a-ga-de*$_3^{ki}$) is mentioned in a fragmentary context. The duplicate accounts of MAD 4, 16 and MVN 3, 57 mention the bad_3 lugal, possibly synonymous with the previously mentioned bad_3 *a-ga-de*$_3^{ki}$ or later toponym Dūr-šarrim. The cities of Akkade, Ešnunna and Tutub as well as the Tigris River are mentioned within this corpus. More directly, OAIC 32 lists an estate of Akkade (*šu* a-ga-de$_3^{ki}$). There are otherwise few geographic toponyms that assist in triangulating the location of these unofficially excavated texts. The mention of the Gate of Tišpak (ka_2 ^{d}*Tišpak*) in OAIC 7 certainly locates the text, and possibly the entire lot, near Ešnunna. However, given the more frequent references to Inanna

[279] The collection history was reconstructed by N. Veldhuis, available online here. The relevant passage from H. F. Lutz reads: "The following text is taken from a tablet (ucbC 756) which comes from the site of Tell Seba'. This mound is situated in the Nahrawân region, beyond the Diyâlâ river, which territory contains the tells of Bismaya, Asmar (Ašnunnak), Tshuma, Khafadjy, Ašjaly, and Adjrab. No exhaustive survey of this region has as yet been made by the Government Survey Office in Baghdad. The writer was fortunate in acquiring a goodly number of cuneiform tablets and other archaeological objects from each of the above-mentioned sites" (UCP 9/6: 379).

outside of the onomastica, it is also possible that these texts derive from a smaller, related or nearby site.[280]

6.3. Tablet and Script

Some features of this collection of tablets accord with the cited northern characteristics, especially the prevalence of the Akkadian language. However, there are some potential foreign elements in some of these unprovenienced texts (e.g. OAIC 34). Indeed certain texts exhibit truly singular phenomena, such as the casual tabular format of OAIC 18.

In his analysis of the texts published in OAIC, Gelb speculates that specific texts may have been written by the same scribe based on their similar paleography (e.g. OAIC 7 and 36). Other texts he hypothesizes are school texts based on both the poor quality and the disjointed contents. Compared to tablets from other Diyala sites, especially Ešnunna, these texts align themselves through their contents to a temple context, which will be addressed in turn in the following sections.

The texts in OAIC exhibit confusion over sign forms (OAIC 20, 23 and 34; Gelb 1955: 177) and occasional sloppy tablet formation. The use of munus in place of dam for "wife" is similar to variations found at Gasur. As at Ešnunna, the unprovenienced texts from the Diyala show an unclear fluctuation between e_2 and sa in the personal name ^{d}utu-e_2 (e.g. OAIC 33, MAD 1, 3 and 280). Against the hypothesis that these divergent orthographies represent two distinct people is the clear parallelism in MAD 1, 102, 273, 293, 295 and 330 where the same set of individuals is repeated in each text.

[280] W. Sommerfeld has suggested all attestations of $MUŠ_3$ (inanna) be amended to tišpak (IMGULA 3/2 and 3/3, forthcoming); I refrain from such emendations that are guided by pre-formed suppositions about the provenience specifically because of the provenience test developed in this section. I believe this alteration would seriously skew the results.

6.4. Terminology

This miscellany of tablets from the Diyala possesses typical administrative terminology, such as si-tum ("remainder"), *ḫubullum* ("loan debt") and la_2-ia_3 ("arrears"). As mentioned in the previous section, there is a propensity towards the Akkadian language, employing *kullu* ("to hold") instead of the Sumerian šu-du_8 and *šībūtim* ("witnesses") for $abba_2$-*bu-tim*. Several of the unique terms from this corpus have already been addressed within the broader contexts of the above sections (e.g. *rugummā'um, kušurrā'um* and *ikšur* in section 5.5).

6.5. Metrology

Typical of the administrative records of the period, the capacity metrology is most prevalent and therefore easiest to reconstruct. Despite the small size of these miscellaneous Diyala texts, there are a variety of metrological conventions that warrant observation. Again, the presence of 4-barig notations indicate that the larger 300-$sila_3$ gur (synonymous with the imperial gur) was in use (e.g. OAIC 18, 32; MAD 4, 16; MVN 3, 38, 57, 80; SAKF 2)

The gur diri was briefly introduced above, supplementing the discussion of the gur *si-da-ru*. Among the unprovenienced texts, it is attested in MVN 3, 38.

obv.	obv.
1) ⌜4(u)⌝ 3(aš) ⌜še⌝ [gur] saĝ-⌜ĝal$_2$⌝	1) 43 saĝĝal gur measures of barley,
2) 7(aš) 2(barig) 3(ban_2) še ⌜gur⌝	2) 7 1/2 gur (*Akkade*) measures of barley,
3) a-ḫu-dingir	3) (for) Aḫu-ilum;
4) 1(u) še gur saĝ-ĝal$_2$ diri	4) 10 "excess" saĝĝal gur measures of barley,
5) 2(aš) 4(barig) še gur diri	5) 2 "excess" gur (*Akkade*) measures and 4 barig of barley,
6) be-li_2-gal-zu	6) (for) Bēlī-galzu;
7) 1(u) 7(aš) 2(ban_2) še gur diri	7) 17 "excess" gur (*Akkade*) measures and 2 ban_2 of barley,
rev.	rev.
1) iš-ma_2-dingir	1) (for) Išma-ilum;
2) 1(u) 2(aš) še gur diri	2) 12 "excess" gur (*Akkade*) measures of barley,
3) be-li-gi	3) (for) Bēlī-kēn.

This capacity unit was utilized in the following Ur III period in a limited number of examples. The arithmetic of the Ur III accounts Nisaba 7, 23 and TCBI 2/2, 3 demonstrates that at least by

this period, the gur diri was the normal 300-sila$_3$ gur. This association is supported for the Old Akkadian period by the notation 4-barig in MVN 3, 38 obv. 5, which precludes the use of the 240-sila$_3$ gur there. However, this does not directly resolve the meaning of diri.

During the subsequent Ur III period, the gur diri was associated with the credit section of accounts (e.g. BBVO 11, 270, 6N-T113, BBVO 11, 298, 6N-T783, BBVO 11, 299, 6N-T857). Perhaps this capacity measure was derived from the established bookkeeping notation of diri, which denoted deliveries and various credited items in excess of the calculated debits (Englund 1990: 48-51). Therefore, this notation in MVN 3, 38 probably marks a surplus carried over from a previous account period that would be reckoned against new debits in the current account period.

The evidence for equivalence rates corresponds with the expected values throughout Mesopotamia at this time. In the duplicate records MAD 4, 16 and MVN 3, 57, various qualities of sheep are sold for barley in the following amounts:

33 udu ḫi-a (at 4-barig 2-ban$_2$ each)	= 28 gur 3-barig
30 udu ḫi-a (at 3-barig 2-ban$_2$ each)	= 20 gur
5 udu ḫi-a (at 2-barig each)	= 2 gur

Those sheep of the highest price are destined for Akkade (*ana Akkade*), while the two following entries are both intended for the unlocated toponym bad$_3$-lugal^{ki}. The price of small cattle set at 1/2 gur *Akkade* is well established in the Tell Suleimah archive (see section 3.1.6). These prices are comparable to some contemporary documents, for example CT 50, 80, where a bull calf (Sumerian: amar-nita) sells for six shekels of silver. The price of the sheep is higher than that established in ITT 5, 6671, which records the sale of ovicaprids at a rate of one-half shekel per sheep. There does not appear to be any evidence of inflated prices.

6.6. Prosopography

The collection of texts in OAIC mentions Inanna more frequently than any other deity, particularly in contexts where individuals are listed as being in the service of the goddess (ARAD$_2$ ^{d}inanna or geme$_2$ ^{d}inanna). A temple context is suggested by the presence of several classes of priests among the individuals mentioned in the documents: gudu$_4$ ("annointing priest"; Akkadian: pašīšum) and sanga ("chief temple administrator"; Akkadian: *šangûm*).[281]

The presence of a temple at Ešnunna is known through the figure Uṣi'um the gal-sukkal Tišpak ("the chief temple administrator of Tišpak").[282] However, major urban centers such as Ešnunna maintained shrines and lesser temples to other important deities.[283] Therefore, the tablets from OAIC may derive from another, smaller temple on the site of Ešnunna or a nearby town. It is also plausible that Inanna was the divine companion of Tišpak, and both were served by the same temple.

6.7. Keyness Criteria for Provenience Assignment

As detailed in Chapter Two, there are digital tool sets that are able to determine degrees of similarity and distinctiveness between two or more text corpora. I have applied the AntConcordance keyword application to determine how similar the unprovenienced Diyala texts are with each of the other three excavated contexts from Ešnunna, Tutub and Tell Suleimah. As a control, the unprovenienced Diyala texts will also be compared to the Girsu corpus.

[281] It's less certain if the maš-maš (“incantation priest”; Akkadian *mašmaššum*) was linked with the temple complex here.
[282] *AuOr* 9, 5.
[283] Only the e$_2$-sikil-la (*bēt* Tišpak) is known at Ešnunna presently (George 1993: 141). However, there appears to be some confusion as to whether Inšušinak was also worshiped in the city at some point (1993: 44).

Ideally, such corpus comparisons require representativeness, homogeneity, comparability and reliability (Rayson and Garside 2000:1). Unfortunately, we are significantly more constrained with ancient text corpora than with the living language corpus originally intended for such standards and methods. Due to the relatively low volume of text samples in the Old Akkadian corpus, all administrative texts are included; there is no random sampling process. Therefore, there is the possibility that results will be skewed based on the accident of preservation, discovery and publication. This affects measurements of homogeneity within each corpus, as well as the inherent comparability of two corpora.

The provenience test was built from five distinct text corpora, standardized and prepared following the methods presented in sections 2.2.1.2 and 2.2.1.3. A lemma list was then loaded into the AntConcordance software, bundling grammatical variations into one lexeme. Additionally, a Word Stop list was uploaded, which blocked all broken or incomplete words from the frequency analysis. The text corpora from Ešnunna, Tutub, Tell Suleimah, Girsu and Kiš were uploaded individually to serve as the "base" against which the unprovenienced Diyala corpus could be assessed. The keyness result is a mathematical measurement of word frequencies that deviate from the reference corpus by either appearing more than (positive values) or less than (negative values) the reference corpus. Consequently, each statistically significant word reflects how distinct the Diyala corpus is from each of the other sites. Therefore, the comparison that shows the least amount of variation—low keyness measurements—between the "Diyala" texts and texts from the other five sites will indicate corpus-wide similarity.[284] A detailed presentation of the significant terms and their keyness measurements to 99.99% statistical significance ($p < .0001 = 15.13$) are reproduced here for each site.

[284] While only administrative texts are included in this comparison to control from differences that might arise from genre specific vocabulary, there may still be observed deviations that are due to differences in economy and not linguistics.

Keyness Rank	Raw Frequency	Keyness Measurement	Term	Translation
1	17	40.64	PAP	--
2	29	34.21	tug_2	Garment
3	14	33.47	|ŠU+LAGAB|	Total
4	13	31.08	dabin	Semolina
5	13	31.08	GAN_2	Field
6	48	25.97	*a-na*	To/for
7	10	23.90	*i-di$_3$-in*	He gave (it)
8	10	23.90	iri	City
9	9	21.51	$ARAD_2$-*su*	His servant
10	8	19.12	$a\text{-}ra_2$	n times
11	7	16.73	$ARAD_2$	Servant (of)
12	7	16.73	ĝeš-šid	--
13	7	16.73	gu_7	To eat
14	7	16.73	*iš-te$_4$*	With
15	20	15.42	$abba_2$	Elder
16	13	15.41	im	--
1 (Negative)	3	28.18	gur saĝ-ĝal$_2$	Capacity Measure
2 (Negative)	94	18.62	še	Barley
3 (Negative)	1	16.50	mu	Year

Table 39: Unprovenienced Diyala Texts Compared to the Ešnunna Corpus

The unprovenienced Diyala corpus differentiates itself from the Ešnunna corpus along several lines. First, there is an increased preference for the Akkadian language in the administrative texts. Second, the nature of the economy addressed in each corpus appears to be different with the Ešnunna corpus reflecting an emphasis on grain, and the Diyala texts privileging garments and non-generic barley. Third, land tenure appears to be more prominent in the Diyala corpus.

Keyness Rank	Raw Frequency	Keyness Measurement	Term	Translation
1	94	75.12	še	Barley
2	75	60.41	gur	Capacity measure
3	30	32.43	gin_2	~ 8.33 g
4	48	29.90	*a-na*	To/for
5	17	25.40	PAP	--
6	21	24.53	ku_3-babbar	Silver
7	14	20.92	|ŠU+LAGAB|	Total
8	13	19.42	GAN_2	Field
9	13	18.42	im	--

10	13	19.42	sa_{10}	Exchange
11	12	17.93	gi	Reed
1 (Negative)	5	80.33	$maš_2$	Goat
2 (Negative)	16	46.65	udu	Sheep
3 (Negative)	38	41.76	dumu	Child

Table 40: Unprovenienced Diyala Texts Compared to the Tutub Corpus

Similar to the Ešnunna comparison, there is a distinction in the preferred local industry, but along different lines; since Tutub is known for its garment production, the distinction here is one of grain production and/or management. Additionally, the unprovenienced texts include more land transactions while the Tutub corpus focuses more on pastoralism. Overall, the language of the two corpora appears fairly close, with few Akkadian anomalies.

Keyness Rank	**Raw Frequency**	**Keyness Measurement**	**Term**	**Translation**
1	17	22.55	PAP	--
2	20	19.94	$abba_2$	Elder
3	29	19.88	tug_2	Garment
4	13	17.24	dabin	Semolina
1 (Negative)	11	82.72	*in*	In
2 (Negative)	94	49.93	še	Barley
3 (Negative)	1	20.90	ziz_2	Emmer

Table 41: Unprovenienced Diyala Texts Compared to the Tell Suleimah Corpus

The statistically significant deviations in the Tell Suleimah corpus are comparatively small in contrast to the better-attested sites of Tutub and Ešnunna. The prevalence of Akkadian among the Tell Suleimah texts undoubtedly contributes to this level of similarity. The difference between these two corpora is similar to that between the unprovenienced texts and Ešnunna. However, while the Tell Suleimah archive focuses on barley and emmer, the unprovenienced Diyala corpus shows a marked preference for semolina. This may be due to different periods during the agricultural cycle since milled products such as semolina and flours can only be processed after the harvest of barley and emmer wheat.

Keyness Rank	Raw Frequency	Keyness Measurement	Term	Translation
1	48	125.37	*a-na*	To/for
2	20	75.66	$abba_2$	Elder
3	46	71.21	*šu*	Of
4	94	70.39	še	Barley
5	17	63.46	PAP	--
6	75	54.76	gur	Capacity Measure
7	11	45.89	$eš_2$-gid_2	--
8	10	41.72	*i-*di_3*-in*	He gave (it)
9	9	37.54	$ARAD_2$-*su*	His servant
10	10	35.28	zu-zu	Personal Name
11	21	32.80	u_3	And
12	13	32.12	sa_{10}	Exchange
13	7	29.21	ĝeš-šid	--
14	7	29.20	*iš-*te_4	With
15	6	25.03	a-ga-de_3^{ki}	Geographic Name
16	6	25.03	bur	Area Measure
17	6	25.03	um-mi-$eš_{18}$-dar	Personal Name
18	21	24.92	ku_3-babbar	Silver
19	8	23.90	na-bi-um	Personal Name
20	5	20.86	a-ti-e	Personal Name
21	5	20.86	gi-nu-nu	Personal Name
22	5	20.86	su-ni-tum	Personal Name
23	13	20.55	im	--
24	10	17.82	iri	City
25	4	16.69	a-li-li	Personal Name
26	4	16.69	a-ša-ša	Personal Name
27	4	16.69	be-li_2	Personal Name
28	4	16.69	i-bi_2-bi_2	Personal Name
29	4	16.69	*im-ḫur*	He received (it)
30	4	16.69	ma-šum	Personal Name
31	4	16.69	šu-um	--
32	4	16.69	^{ĝeš}šubur	Chariot
33	5	15.72	dingir-kal	Personal Name
1 (Negative)	2	26.12	lu_2	Man
2 (Negative)	5	25.82	$maš_2$	Goat
3 (Negative)	2	25.17	kaš	Beer
4 (Negative)	1	24.92	ma_2	Boat
5 (Negative)	14	22.66	|ŠU+LAGAB|	Total
6 (Negative)	2	15.86	zi_3	Flour

Table 42: Unprovenienced Diyala Texts Compared to the Girsu Corpus

Not surprisingly, there are enormous deviations between the unprovenienced Diyala texts and those from Girsu based on personal names, commodities, resources, metrology and linguistic

affiliation. The strength of these results helps situate the unprovenienced texts attributed to the Diyala closer to the corpora of Tell Suleimah, Ešnunna and Tutub. However, one region that has not been considered is northern Mesopotamia, which was within the Semitic-speaking zone. Therefore, a comparison with the texts from Kiš is included below, with promising results.[285]

Keyness Rank	Raw Frequency	Keyness Measurement	Term	Translation
1	17	19.14	PAP	--
1 (Negative)	38	39.79	dumu	Child
2 (Negative)	8	26.69	ugula	Overseer

Table 43: Unprovenienced Diyala Texts compared to the Kiš Corpus

The similarity between the personal names, language, commodities and metrology is striking. With so few statistically significant deviations between the two corpora, it seems most likely that the texts that have traditionally been assigned to the Diyala based on some few anomalous features (e.g. specific personal names and Akkadian language forms) are an overall best match for the Kiš area. To emphasize this point, a summary of the results is included in the following table.

Site	Total Words Compared	Statistically Significant Words[286]	Weight of Significance[287]
Ešnunna	1,960	19	445.93
Tutub	1,501	14	606.77
Tell Suleimah	1,266	6	233.16
Girsu	3,164	39	1,259.26
Kiš	1,376	3	85.62

Table 44: Summary of Provenience Test Results

[285] Sippar is also an excellent northern city to compare the unprovenienced texts against, but the small number of usable texts prohibits such juxtapositions.
[286] This includes words that are atypically frequent in only the Diyala corpus and those that are similarly atypically absent in the reference corpus.
[287] This measurement is a simple sum total of the individual keyness values to demonstrate how much deviation there is within the 99.99% significant words. For instance, although Ešnunna and Tutub have a similar number of statistically significant words, the weight of the statistical significance varies. This column serves to demonstrate this dimension in the data.

A reappraisal of the arguments advanced in section 2.1.3 begins to take on a new dimension, no longer just a binary match to features from the excavated Diyala material. The overview of *šibšum* and *kušurrā'um* demonstrates a common vocabulary, but the orthographic differences testify to a level of variation that does not lend itself to a neat or simple one-to-one correlation with Ešnunna practices. The appearance of officials in the unexcavated texts and the Ešnunna corpus is not a straightforward correlation either; for instance, Yeṭib-mer, a high official under the Classical kings, is known mostly from the Girsu archive, but also appears in Adab, Nippur and Tutub texts. High officials in particular would have had a presence at multiple sites and cannot be used alone as proof of provenience. In terms of linguistic affiliation, Semitic language features are prevalent in northern Mesopotamia, stretching from Kiš and umm el-Jir to Gasur, leaving a very broad region within which to situate unprovenienced Akkadian texts.

These measurements cannot be used uncritically, however; given the variables that cannot be controlled in the availability and contents of the ancient sources, this technique should be paired with the subjective characteristics identified by specialists, such as orthography, paleography, tablet shape, and grammatical variation in order to determine a likely provenience. The high frequency of Akkadian within the unprovenienced Diyala texts may skew the results without justified correlation. Moreover, the general contents of each archive may not appear related if each addresses a distinct aspect of the local economy (pastoralism vs. agriculture). However, given these uncontrollable variables, we must proceed with an awareness of the influencing factors in the interpretation of results.

An additional caveat is that this medley of unprovenienced texts previously attributed to the Diyala do not have to be treated as a whole. Amongst the unprovenienced corpus there may indeed be several texts that do derive from a Diyala site. The above demonstration was to

emphasize that taken together, the bulk of the texts do exhibit more similarities with Kiš than with the Diyala tablets. This is intended to contribute to the discussion of assigning provenience to unexcavated tablets, both in method and in theory; I am certain that the work here can and will be improved upon as we continue to refine our technological tools and scholarly knowledge.

6.8. Chapter Summary

The congeries of texts accumulated under the title "Diyala" here exhibit definitive northern characteristics. However, the question becomes where in this northern region do they best fit? The provenience test formulated here is just one method of ascertaining a likely origin for such tablets; however, even the result must be evaluated. While the least amount of deviation in the textual contents is at Kiš, the temple context and mention of the Tigris must also be weighed. It is possible that these texts derive from a temple at Ešnunna, but it is also equally possible that they originate from a site, such as Akšak that has received no regular excavations, believed to be on/near the Tigris River. It is my hope that through collaboration, this methodology can be refined to produce more definitive results.

Chapter Seven

7.0. Interpretation and Context

This chapter builds upon the findings and observations of the preceding four chapters and serves to contextualize those findings within a broader historical framework. Each sub-section of this chapter will investigate a specific feature of the Diyala administration, identified in the previous chapter, across the other major sites of the Akkadian Empire. The goal of this comparison is to ascertain if the practices implemented in the peaceful Diyala region were also employed in the more rebellious polities of the central and southern Mesopotamian regions. Either the presence or absence of a feature provides meaningful insight into the administration of diverse areas in the world's first empire.

The Classical Sargonic texts from the Diyala, taken together, exhibit certain peculiarities in the tablet layout, orthography and terminology of the administration. The practice of inverted writing and using check marks (PAP) are largely relegated to the Diyala or northern sites. The texts published in OAIC are replete with unconventional layouts and sign confusion. In sum, there appears to be significant levels of variation in what was traditionally a highly standardized practice in tablet formation and script production. Anomalies in tablet format are paralleled by other local particularisms.

At Ešnunna fodder for animals is issued in the 300-$sila_3$ gur, while disbursements to individuals (rations, prebends, emoluments, etc.) are given according to the 240-$sila_3$ gur in the same text. At Tell Suleimah transactions involving loans and sales tend to be rendered in separate metrology systems. Additional local bookkeeping practices are observed at Tutub where the use of $mu\text{-}ku_x$ is utilized for larger cattle (gu_4), while *yimḫur* denotes transactions for ovicaprids (udu, $maš_2$, etc.). These trend needs to be borne out by more evidence from the other

northern, central and southern Mesopotamia sites. The use of Narām-Suen's 300-$sila_3$ gur for feeding animals may indicate a link between the imperial administration and herding activities *in lieu* of local laborers working in fields and construction projects. The shipment of the highest quality sheep to Akkade in MVN 3, 57 supports the idea that the Akkadian kings were particularly interested in the sheep and goats of the Diyala region.

Each of these smaller observations informs the broader picture of the imperial administration overlaid on the Mesopotamian cities. One significant point of convergence between the Akkadian kings with their accompanying policies and the local citizens was in the central institution excavated at each site. The city households (Sumerian: e_2; Akkadian: *bētum*) in the Diyala region appear to be local, secular institutions managed by the governor (Sumerian: $ensi_2$; Akkadian: *iššiakkum*) and the chief administrator (Sumerian: šabra ; Akkadian: *šabrûm*). One of the main functions of the household was to issue loans to citizens, who repaid at the end of the agricultural cycle (i.e. after the harvest). But, the households in the Diyala participated in multiple industries, depending on the local ecology and environment.

The larger centers of Tutub and Ešnunna were residences for members of the royal family, a few of whom were installed as governors to oversee administrative operations. However, there are few attestations of shipments (or extractions) of local goods to the capital city, which may indicate minimal interference from the Akkadian kings. Overall, there appears to be limited intrusion from the Akkadian Empire in the local economy and resource management in the Diyala region. Does this imperial tactic apply to other regions of Mesopotamia at this time? And, does this observation have explanatory power for the clear differences in political and military relations between the disaffected south and the Akkadian north with their Akkadian

rulers? An exploration of this level of interference of the Akkadian Empire in the large, urban centers of Adab, Girsu, Umma and Gasur will begin to formulate an answer to these questions.

7.1. Points of Comparison

The features articulated as meaningful in the Diyala corpus generally separate into three categories: metrology, transactions and agents. At this time in the Akkadian Empire there were a variety of grain capacity measures, however the distribution of these different sized containers is unclear. Furthermore, the parsing of specific metrology standards is not always a transparent practice. Not only are there several local measures noted in the historical record (gur *Marda*, gur *Gudamišum*, gur *Adab*), but there are conflicting values for specific "standard" measures. Part of this is reconciled by the fact that the gur maḫ and gur si-sa$_2$ are in fact relative terms with "larger" and "normal", respectively, being applied in a specific, local context (Powell 1989: 498).[288] However, some puzzles remain.

In the Diyala and Adab area there appears to be some confusion over the relative size of the gur saĝ-ĝal$_2$ as evidenced in the relevant excerpts from the following texts:

MVN 3, 38: 4) 1(u) še gur saĝ-ĝal$_2$ diri
5) 2(aš) 4(barig) še gur diri

MAD 1, 287: 1) 4(aš) 3(ban$_2$) še gur saĝ-ĝal$_2$
2) PN
3) 4(barig) še

MAD 1, 28: 1) [...] ⌜1(u)⌝ 5(aš) 5(ban$_2$) še gur saĝ
2) [...] ⌜6(aš)⌝ 3(barig) 4(ban$_2$) še gur
3) [...] 2(u) 4(barig) še gur

[288] See BIN 8, 143 and DPA 11 where the gur si-sa$_2$ is used to denote a 300-sila$_3$ gur. Similarly, maḫ is used adjectivally for both the gur saĝ-ĝal$_2$ (ITT 2, 4480) gur *Akkade* (AIA 13; BIN 8, 117). In the ED system observed in the Fara sources the gur maḫ is equal to 480 sila$_3$ (i.e. double the normal size gur). There is no evidence to support the idea that the gur maḫ was this size during the Old Akkadian period. It appears to denote a capacity measure that was "larger" than whatever was determined to be normal for the city, which could be either the gur *Akkade* or the gur saĝ-ĝal$_2$ (Powell 1989: 496; BIN 8, 215).

CUSAS 13, 168: 9) 6(aš) 4(barig) še gur saĝ-ĝal$_2$

Fortunately, these anomalies appear to be regionally distinct and therefore, should not interfere with the analysis of the major southern centers in the following pages.

One of the key observations from the preceding chapters was the differing use of the various metrology systems at Ešnunna and Tell Suleimah. Therefore, in this chapter the collocation tool is utilized to detect similar complementary distributions at Adab, Girsu, Umma and Gasur in order to ascertain if the patterns observed in the Diyala are part of a broader administrative system, or remain regional particularisms. The goal is to ascertain if either the gur saĝ-ĝal$_2$ or the gur *Akkade* show a meaningful correlation with an specific commodity.

A second point of comparison builds upon the observation from Tell Suleimah that specific transactions may be associated with a particular metrological measurement. The administrative corpora of Adab, Girsu, Umma and Gasur are explored in order to detect any significant correspondence between a type of transaction and either the "regular" metrology (gur saĝ-ĝal$_2$) or the imperial metrology (gur *Akkade*). The guiding assumption is that the imperial measure was closely associated with the economic interests of the Akkadian kings, while the "regular" metrology is devoid of any such connotation. The fundamental questions that this broader investigation aims to address are: Is the administration of the Diyala directly comparable to the major urban centers throughout the Akkadian Empire at the height of their control in the Classical Period? And, is this reflective of differing managerial strategies due to commodity production or levels of resistance, or both?

A final point of comparison that was partially lacking in the Diyala corpus was a keener understanding of the role of specific officials. This is partially due to the general observation that the northern administration was more palace-centric and therefore more directly administered by

the king (Westenholz 1999: 64). Conversely, the southern city-states possessed a more visible governor (Sumerian: ensi$_2$; Akkadian: *iššiakkum*) and a more robust temple sector replete with its accompanying personnel. Therefore, the role of this comparison between the Diyala and southern cities is to contrast the context of specific high-level functionaries to determine if there are any significant differences in their tasks and roles, or if their asymmetrical representation between the north and south is more due to chance of preservation or deviations in local economy.

7.2. Areas of Comparison

The corpora used in these comparisons are relegated to the larger (approximately 200+) collections of Classical Sargonic administrative texts. A summary of the sites is presented below.

Ancient City	No. of Classical Sargonic Administrative Texts
Girsu	771
Adab	715
Umma	320
Gasur	192

Table 45: Corpora of Major Centers

This is not a complete capture of all Classical Sargonic administrative texts from each site, but provides a large percentage and representative sample.[289] The time and effort required to create digital files for *all* extant and relevant cuneiform objects would exceed the time limitations of this dissertation. However, it is an integral part of my on-going research agenda and future related projects outlined more fully in Chapter Eight.

[289] The specific confidence levels and sample error will be given below in the relevant sections for each city.

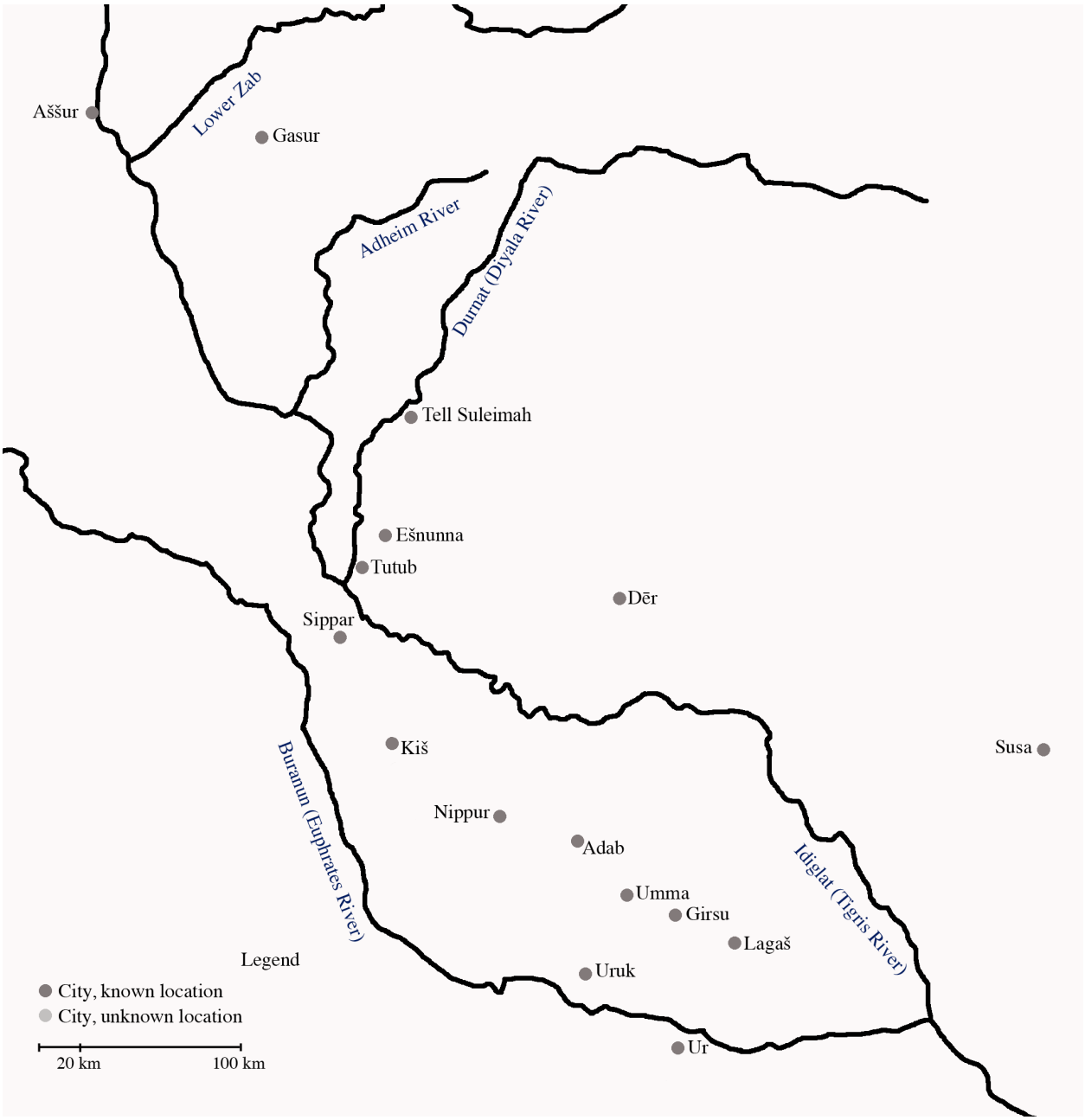

Figure 21: Map of Sumer and Akkad

7.2.1. Local Economies

Before offering points of similarity or deviation, it is important to establish the administrative context in which to interpret results. Each of the various regions within Mesopotamia possessed a distinct ecological niche that predisposed the local economy towards specific areas of production. In order to capture the most popular or prevalent industries within

each site, a tabulation of raw frequencies from a corpus word list will be used. The results are presented below and include a general discussion of the context of the local economies during the Classical Sargonic period.

7.2.1.1. Girsu

As mentioned in Chapter Two, there are nearly 2,000 cuneiform texts from Sargonic Girsu, dating mostly to the Classical period; yet, only half (approximately 950) are published in an accessible format that is beyond basic catalog metadata. Therefore, the large corpus from Girsu is deceptive in its size; fortunately, of the available Classical administrative material, 80% is compiled for analysis here.[290] The 771 administrative texts from the Classical period of the Sargonic administration cover a wide variety of commodities, however, as illustrated in the table below, certain industries were more prevalent at Girsu.

Rank	Raw Frequency	Word/Lexeme	English Translation
1	353	udu (all varieties)	Sheep
2	295	|ŠU+LAGAB|	Total
3	277	gur (all variants)	Capacity measure
4	231	$maš_2$ (all varieties)	Goat
5	231	$sila_3$ (all variants)	~ 1 liter vessel
6	212	GAN_2	Field
7	210	še	Barley
8	185	dumu (all variants)	Child
9	147	ma-na (all variants)	~ 500g weight
10	145	dug	Vessel
11	144	gu_4 (all varieties)	Oxen
12	143	lu_2	Man
13	133	zi_3 (all variants)	Flour
14	131	zi-ga (all variants)	Credit
15	124	tug_2	Garment
16	122	gin_2	~ 8.33g weight
17	121	ma_2 (all variants)	Boat
18	111	ku_x (all variants)	Enter
19	102	ku_6	Fish
20	99	ugula	Overseer

[290] This representative sample offers a 99% confidence level with a sample error of +/-2%.

21	98	guruš	Laborer
22	90	iti	Month
23	90	siki (all variants)	Wool
24	79	ninda	Bread
25	68	gur_4-gur_4	Vessel

Table 46: Most Common Lexemes in the Girsu Administration

This truncated list of the top twenty-five most frequent lexemes within the Girsu corpus demonstrates that the livestock economy (Sumerian: udu, $maš_2$ and gu_4) was more popular than textiles, metals and labor management at this time. Also marked by their low frequency are vocabulary for rations, dairy products and work groups. Given the city's location near the marshlands, fishing was also a common enterprise. A third industry, but almost equally as prominent as herding, was the production of grain. The high frequency of dumu ("child") is certainly due to the regular registration of patronymics of individuals. Surprisingly, the notation of goods entering local administrative control (Sumerian: ku_x) exceeds those out-going (Sumerian: e_3).[291] This is in part to be associated with the relatively high frequency of ships in the Girsu corpus. Overall, these terms are part of an entire matrix of lexemes denoting the flow of goods and transfers of control.

7.2.1.2. Umma

The site of Umma is unusual among the ancient Mesopotamian cities in that it has never been formally excavated; throughout the 19th and 20th centuries, scholars and enthusiasts visited the site and, through the recent turn of events in the 21st century in the region, looters have harvested the site for valuable antiquities. The nearly 30,000 texts ascribed to Umma throughout its three-millennium history have been haphazardly collected and casually disseminated to museums and collections worldwide.

[291] e_3 only occurs nine times.

Of the disparate sources that have been successfully reassigned to the ancient site, three major archives appear at Umma during the Sargonic period (Foster 1982b; 1982e: 5-6; 1993b: 175-176). The archive designated Umma A originated during the reign of Rīmuš (Pre-Classical Sargonic/Middle Sargonic).[292] B. Foster argues that this archive records the management of a forced-labor camp at the nearby site of Sabum (1982b: 8-51).[293] Umma B, also known as the archive of Ur-Šara, records land leasing, animal husbandry and general commerce over a period of 25 years during the Classical Sargonic period. The largest of the three archives, Umma C, details the governor's management of the city most likely during the reign of Šar-kali-šarrī. This administrative archive contains typical transactions for running the central household in the city, as well as records of the distribution of oils and aromatics. Based on the internal evidence from these Umma texts, Foster concludes that each archive was originally maintained in a different location (1982b: 149).

In his assessment of land tenure practices in Mesopotamia, Foster observed that there were some local features that set Umma apart from its neighbors Girsu and Sagub. Expectedly, he found that individuals associated with the Akkadian ruling family and high-ranking local officials held the largest tracts of land in the region (1982a: 83-84). Surprisingly, however, Foster also noted that the standard term šuku ("prebend") was completely absent in Umma land accounts; in complementary distribution to this is the use of zi-ga ("lifted/credited") in Umma but not at Girsu or Sagub (1982a: 82-83). In this paradigm, he then concluded that "sustenance at Umma was considered a 'disbursement' by the owner of the land from the income due him, while at Girsu 'sustenance' was income due the user directly" (1982a: 83).

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[292] Others argue that this archive dates to Šarru-kēn's time (Westenholz 1984b: 77; Neumann 1989: 522); regardless, the archive is pre-Classical Reforms, excluding it from study here.

[293] A. Westenholz objects to this interpretation on contextual grounds (1984b: 77-78); he is followed in his skepticism by H. Neumann (1989: 523).

There are 320 Classical Sargonic administrative texts in the Umma corpus under review, again not a complete capture of all available material, but a representative sample of the published, available material (~ 80%).[294] Similar to Girsu, grain production and ovicaprid husbandry dominate the local economy. Metals, textiles and dairy products play a minor role in the Umma economy.[295] However, at Umma there are some local particularisms; one of the most prominent is the presence of dating terminology (Sumerian: mu, iti and u_4), but this is hardly surprising given the assigned Umma provenience for the mu-iti texts (Foster 1979; 1982b: 2).[296] There appears to be a prominent local industry for secondary animal products such as wool and hides, while the fishing economy prominently in Girsu is nearly absent.

Rank	Raw Frequency	Word/Lexeme	English Translation
1	353	še	Barley
2	308	ninda	Bread
3	296	udu (all varieties)	Sheep
4	290	gur	Capacity measure
5	234	$sila_3$ (all grammatical variants)	~ 1 liter vessel
6	223	mu	Year
7	220	iti	Month
8	186	$maš_2$ (all varieties)	Goat
9	159	dug	Vessel
10	113	|ŠU+LAGAB|	Total
11	105	zi_3	Flour
12	81	ma-na	~ 500g weight
13	69	kuš	Hide
14	69	$saĝ$-$ĝal_2$	~ 240 liter capacity measure
15	69	$ša_3$-du_{10}	Infant (used for goats)
16	69	ugula	Overseer
17	68	a-ga-de_3^{ki}	Imperial measure
18	63	dumu (all variants)	Child
19	58	u_4	Day
20	55	ama	Mother (qualifying cattle)

[294] This representative sample offers a 99% confidence level with a sample error of +/-3%.
[295] This is further supported by the low frequency of $geme_2$ ("female laborers") often associated with the textile industry.
[296] H. Neumann has suggested this new Akkadian dating system is reflective of problems of integration, not, as Foster argues, a sign of national consciousness (1989: 521). He further speculates that UCP 9/2 83 also demonstrates this local dating system prior to the apotheosis of Narām-Suen (1999: 360, fn. 30).

21	54	siki	Wool
22	52	lu_2	Man
23	50	sipa	Shepherd
24	45	dabin	Semolina
25	45	du_8	To release

Table 47: Most Common Lexemes in the Umma Administration

Remarkably absent are large numbers of male laborers (Sumerian: guruš); this appears to be in proportion to the increased presence of shepherds working in the animal husbandry industry. However, the regular mention of work team overseers (Sumerian: ugula), who are assigned to teams of guruš, is puzzling in this scenario; the mention of an ugula certainly implies the unrecorded or unrecovered presence of groups of work teams at Umma.

7.2.1.3. Adab

There has been a recent surge in the publication of cuneiform materials from Adab due in large part to the publication efforts of David I. Owen and his series, the Cornell University Studies in Assyriology and Sumerology (CUSAS). The half-dozen or so volumes of Old Akkadian material from Adab that have been published or are in preparation span the entire chronological breadth of the Sargonic period, adding valuable insight into Early and Late Sargonic administration. The new material also adds substantially to the Classical materials from this major urban center. The Adab corpus under analysis here is close to 100% of all available cuneiform material for the Classical Sargonic administration, offering the most complete capture of all sites included in this chapter.

The detailed study of the Adab corpus has illuminated several distinct internal archives, reconstructed by modern scholars based on their contents, prosopography or other unique features. There are six major archives identified thus far: the Central Archive, the Mesaĝ Archive, the Kitchen Archive (inclusive of the Meat Archive and the Sipa-anne Archive) and the

Brewery Archive.[297] Many of these archives are small, consisting of fewer than twenty texts, but their organization into archives increases the level of penetration into the ancient administration.

A common thread throughout these different archives is the expenditure of foodstuffs for divine offerings; despite the interaction with the cultic sphere, the cultic officials appear to exercise little authority or participation in the administration captured by the extant texts (Maiocchi 2009: 13-14). In addition to temple offerings, the brewery often issued beer to travelers. Due to the high percentage of Semitic names in these brewery records during the Classical Sargonic period, M. Maiocchi has speculated that these were travelers associated with the royal court at Akkade—loyal Semitic followers of the king (2009: 10; 2012: 22). Most of the Semitic name-bearers are qualified as (šu)-gal$_5$-la$_2$ ("constable"), an occupation that is associated with locating and retrieving groups of workers, which Maiocchi views as working on behalf of the king.

Below are the results from the Adab corpus of the most frequent lexemes.

Rank	Raw Frequency	Word/Lexeme	English Translation
1	566	gur	Capacity measure
2	524	še	Barley
3	489	sila$_3$	~ 1 liter
4	437	udu	Sheep
5	331	|ŠU+LAGAB|	Total
6	297	ninda	Bread
7	196	iti	Month
8	160	zi-ga	Credited
9	158	gin$_2$	~ 8.33g weight
10	132	maš$_2$	Goat
11	127	tug$_2$	Textile
12	111	lu$_2$	Man
13	100	ziz$_2$	Emmer flour
14	99	ma-na	~ 500g weight
15	91	ne-saĝ	Type of offering
16	87	*šu*	Of

[297] To these may be added the smaller archives of Dada, En-e, Ur-Ninsun and a-NI-za.

17	86	dub-sar	Scribe
18	77	GAN_2	Field
19	75	šu ba-ti	He received it.
20	70	sa_2-du_{11}	Type of offering
21	68	a-ga-de_3^{ki}	Imperial standard
22	68	dabin	Semolina
23	65	u_4	Day
24	64	dumu	Child
25	64	saga (SIG_5)	High-quality

Table 48: Most Common Lexemes in the Adab Administration

In addition to the expected presence of grains and small cattle in the texts from Adab, the association with the temples is apparent (e.g. ne-saĝ, sa_2-du_{11}) as is the connection to Akkade suggested by Maiocchi. Overall, the Adab texts have more Semitic linguistic elements than Umma and Girsu, but as evidenced below, not nearly as many as Gasur. The general absence of low-level labor (guruš and $geme_2$) suggests that the constituent archives from Adab address specialized labor.

7.2.1.4. Gasur

From the ancient city of Gasur, 192 administrative texts were excavated from the Sargonic levels of the palace structure between 1928 and 1931 by the Harvard-Baghdad School Expedition. Both the archaeological context and the internal tablet contents suggest that these texts are a single, coherent archive. Previous work on the archive has highlighted the agrarian nature of ancient Gasur; the texts focus primarily on fields, their seed and fodder, yield and post-harvest processing.

B. Foster has summarized his reconstruction of the local economy as follows:

> As in Sumer, the royal estate at Gasur was worked by collective labor of agricultural workers provided with government draft cattle and plows. Auxiliary labor was provided by guruš divided into teams, each under its own supervisor. Seed was provided from the central storehouse; all harvested grain was put into central storehouses. Workers were not chattel slaves, for the most part, but were recruited from the local population (1987b: 89-90).

The head of this centralized mechanism was Zuzu, a cadaster official (Sumerian: sa_{12}-du_5; Akkadian: *šassukkum*). Foster argues that Zuzu was responsible for maintaining royal interests in the local economy (1987b: 90). Through further prosopographical analysis, he proffers that the local society was loosely divided into landholders and ration/sustenance recipients. He notes that most landowners and seed recipients (indicating some association with field proprietorship) do not appear in ration lists (1987b: 100).[298] The idea behind this observation, which is not entirely new in Mesopotamian administration, is that those who do not own the means of production (i.e. land) receive rations most heavily during the harvest. The royal fields needed additional staff during the labor-intensive harvest period and may have conscripted individuals via a system known as $eš_2$-gar_3 (Akkadian: *iškārum*). For the rest of the year, many workers were shepherds, smiths, weavers, fullers, scribes, etc.; only during the harvest would extra labor be necessary.

The land tenure system identified at Gasur has also been linked to the broader imperial administration; Foster has observed that the plow unit—defined as the surface area that could be worked by a single plow team (*šu* 1 ^{ĝeš}apin)—at Gasur, Mugdan and Sagub was regularly limited to approximately 100 iku and often includes the term $eš_2$-gar_3 (1982a: 67; 1982g: 46).[299] This distribution is meaningful because Sagub is one of the new royal administrative centers, and Mugdan is understood as a royal estate (1982d). Within this context, Foster classifies the distribution as an imperial feature, a method of organization imposed from the Akkadian elite culture onto local means of agricultural production.

Gasur has also received attention from scholars because of its role of receiving an Akkadian king on official business, offering scholars insight into the relationship between the

[298] However, his data does not control for homonymy in the personal names. As his own explanatory chart indicates, certain personal names do occur across multiple categories.
[299] The calculations of BIN 8, 203 obv. 1-3 indicate the work of one ^{ĝeš}apin was 90 iku, while BIN 8, 144 obv. i 1-2 demonstrates that 108 iku was worked by a single plow. However, BIN 8, 201 obv. 4-5 records a mere 24 iku for a single plow unit.

king and his constituent polities (Foster 1980; Visicato 2001). While the purpose of the unknown king's journey is not made explicit, the local officials prepare to receive the king by providing rations to his servants, sent ahead of him, and organizing enough flour, barley, oil, etc. for a royal banquet upon the king's arrival.

Deeper ties with the royal family are posited by G. Visicato's reconstruction of agents in the archive. He suggests that Dada should be identified with both the title šabra -e_2 ("majordomo of the estate") and as the grandson of the king (Sumerian: dumu dumu-munus lugal "son of the king's daughter") (2001: 470). This interpretation would then claim that Dada was not part of the local administration at Gasur, but was part of the royal administration. Therefore, Ikūnum, son of the local governor (Sumerian: $ensi_2$) would fill the role of the local šabra .

Rank	Raw Frequency	Word/Lexeme	English Translation
1	500	gur	Capacity measure
2	367	še	Barley
3	98	ziz_2	Emmer flour
4	94	dumu	Child
5	94	GAN_2	Field
6	93	*šu*	Of
7	66	gig	Wheat
8	61	*in*	In
9	60	|ŠU+LAGAB|	Total
10	49	$sila_3$	~1 liter
11	43	guruš	Male laborer
12	42	iš-ma_2-dingir	Personal Name
13	41	*im-ḫur*	He received it.
14	36	dabin	Semolina
15	36	$geme_2$	Female laborer
16	31	zu-zu	Personal Name
17	30	*a-na*	To
18	30	u_3	And
19	26	šu-i_3-li_2-su	Personal Name
20	26	udu	Sheep
21	25	gu_4	Oxen
22	24	ga	Milk

23	23	a-ra$_2$	n times
24	23	kam	Being of
25	22	abba$_2$	Elder

Table 49: Most Common Lexemes in the Gasur Administration

The findings of the word list largely support earlier scholarship; the topics in the archive cluster around cereal production and processing (gur, še, ziz$_2$, gig, sila$_3$, dabin), their accompanying fields (GAN$_2$) and requisite labor (guruš, geme$_2$, gu$_4$). Perhaps not surprisingly, several Akkadian linguistic elements find prominence in this archive: *šu* ("of"), *in* ("in"), *im-ḫur* ("He received it."), *a-na* ("to/for"). This preference for Semitic is typical of most northern cities at this time.[300]

The most striking result from this frequency tabulation is the presence of three personal names among the most popular terms in the Gasur corpus. The high frequency of Išma-ilum (iš-ma$_2$-dingir) is likely due to homonymy of a very popular personal name. This is easily proved by the patronymics, where Išma-ilum is named the son of Tammil and also of Dada as well as being listed separately as a "senior" (Sumerian: gal; Akkadian: *rabûm*) and "junior" (Sumerian: tur; Akkadian: *ṣaḫrum*) in HSS 10, 150. The individual Zuzu has already been identified as a key administrator at Gasur, and therefore of all individuals to be mentioned frequently, Zuzu would be expected. This name is also not without problems in homonymy with at least two distinct Zuzu's in this archive: Zuzu the leatherworker and Zuzu the cadaster official. Šū-ilīšu also appears in several contexts; most prominently he is listed as a city elder (Sumerian: abba$_2$ iri^{ki}), a smith (Sumerian: simug), a scribe (Sumerian: dub-sar) an overseer (Sumerian: ugula) and a laborer (Sumerian: guruš). There are also various patronymics: Šū-ilīšu son of Mumu and Šū-ilīšu of Zuzu (our cadastral official?).

[300] Note the presence of Hurrian at Urkeš (Tell Mozan). The lack of Hurrian and preponderance of Akkadian at Gasur may hint at its role as a specifically Akkadian installation, akin with the other inter-city centers in southern Mesopotamia (Westenholz, personal communication, April 30, 2013; Carter, personal communication, May 3, 2013).

7.2.1.5. Summary

To preface the results below, the four sites included for analysis and comparison in this chapter all draw upon the same basic practices of grain production and processing and ovicaprid herd maintenance. However, certain areas show marked proclivities to specific industries. Girsu is more involved in the shipment of goods and the fishing industry, while Umma focuses heavily on bread production, herding and animal byproducts. Adab's attention to the temples likely accounts for its interest in bread production and herding since these were common and necessary offerings to the deities. Both the Girsu and Gasur texts emphasize field management, utilizing draught animals and guruš workers.

7.3. Topical Comparisons

The following comparisons of metrology, transactions and agents draw upon a controlled synchronic view that grows from the micro-historical reconstruction of the Diyala administration in order to evaluate the level of similarity between peaceful and rebellious zones. Within the realm of administration, this includes the introduction of a new capacity unit, the praxis of goods being shipped from local cities to the imperial capital and the role of personnel specifically attached to the royal palace and imperial corp. The goal of this analysis is to determine the level of interference the Akkadian Empire exercised in local administration in order to contextualize the Empire's treatment of different regions. This approach challenges the monolithic view of empire and embraces the potential for a variety of entities and practices within the imperial system.

7.3.1. Metrology

One of the most enduring administrative features of the Akkadian kings was their introduction of the gur *Akkade*. To be sure, many of the earlier capacity units remained in use

during the tenure of the Akkadian kings, but it is the introduction of this intrusive element that offers insight into the level of imperial intrusion and/or innovation into the pre-existing local administrative structure.[301]

The precise interpretation of the presence of the gur *Akkade* is predicated upon the accepted association between the imperial capacity measure and the imperial ruler. In short, the use of a local (i.e. older and smaller) unit connotes an account having local interest, while the adopted use of the new imperial gur implies a more direct relationship between the items and/or agents in the account and the Akkadian rulers (Foster 1982d: 37; 1986b: 50).[302] This assumption is maintained here.

In his study on land tenure practices in Sumer, Foster proffered the hypothesis that the imperial gur was used for milled products while the smaller 240-sila$_3$ gur (typically the gur saĝ-ĝal$_2$) was reserved for harvest activities (1982a: 24). This follows M. A. Powell's suggestion that the larger units (gur *Akkade* and gur maḫ) were the units of measure for internal accounts, such as rations and bread production, while the smaller units (gur saĝ-ĝal$_2$and gur sa$_2$-du$_{11}$) were applied to the seeding and harvesting of local fields (1989: 497). Building on this notion of internal and external accounts, E. Cripps suggests that the scribes recorded palace accounts in the official gur *Akkade*, while local ledgers utilized the pre-existing, smaller capacity units (2010: 15). These observations build a broader picture of a dichotomy between goods that remained local and those that had to be exported to the imperial capital; however, the various

[301] The imperial gur was not the first departure from the older gur saĝ-ĝal$_2$; already in the ED IIIa period at Fara the gur maḫ is attested (again, this is equal to 480 sila$_3$, double the 240-sila$_3$ gur saĝ-ĝal$_2$, so not directly comparable to the Akkadian gur maḫ) (WF 85). And in the subsequent ED IIIb-Early Sargonic period the forerunner to the gur *Akkade*, the gur lugal, is attested (BIN 8, 116 obv. i 1, OSP 1, 31 rev. iii' 3, AS 17, 11 obv. 2).

[302] This change is most palpable in the Lagaš region that had previously utilized a gur saĝ-ĝal$_2$ of only 144 sila$_3$, which was referred to as the "normal gur saĝ-ĝal$_2$" (Powell 1989: 497). This gur is based on a 6-sila$_3$ ban$_2$ unit instead of a 10-sila$_3$ ban$_2$ unit.

studies were inclusive of all Old Akkadian material, which has resulted in a mixing of pre-Reform and post-Reform patterns. This complicates the attempt to identify correlations and patterns involving the imperial administration.

In the system articulated by the observations of Foster, Powell and Cripps, there are ample exceptions, suggesting a high degree of regional autonomy during this period of supposed top-down reforms. The claim that milled products were associated with the imperial gur is *generally* valid, but certain Classical period texts demonstrate exceptions (e.g. CT 50, 179, MC 4, 23, Nik 2, 82). Similarly, this analysis highlights exceptions to the idea maintained by Foster and Powell that seed was reckoned in the local gur saĝ-ĝal$_2$ (HSS 10, 116 and 185; TCBI 2/1 52; AIA 8).[303] What these exceptions might be indicating is that the general observations recognized by previous scholars do not hold for all places and periods throughout the tenure of the Sargonic kings.

The collocate context of the imperial gur indicates that it was predominantly used to reckon amounts of cereals often processed into flours, particularly those of high quality. Those goods that tended to be required by the capital were cereals beyond the basic barley staples (i.e. semolina, emmer, groats and processed flours) as well as oils, beers and dairy products. Notable for their absence are bran, malt, kaš-beer, salt and wheat. This supports Foster's original claim, but the idea of internal/external or palace/local accounts is not addressed directly.

This collocate search was done scanning all words occurring directly within one space to the left of the keyword "gur-a-ga-de3{ki}" allowing all attestations, even those occurring only

[303] Note that these exceptions come from umm el-Jir, umm el-Ḥafriyat and Gasur, areas that geographically may have had closer cultural ties to the Akkadian rulers. Adab 677 and 716 offer unclear examples, recording in the gur maḫ and gur si-sa$_2$, both problematic measures due to their relative values.

once.[304] For this inquiry, the MI (Mutual Information) score is more important since the goal is to measure the strength of the relationship between the imperial gur and its various commodities; however, the MI score can misrepresent a collocate. For instance, if a term only occurs once in the corpus, it will have a very high MI score in relation to its collocates. Therefore, the results require manual validation; these measurements are guides pointing towards potentially significant correlations, but these relationships always need to be individually evaluated by a specialist who can account for context, an extremely sensitive factor. Understanding this relationship will help determine which comestibles were diverted from the local economy to supply imperial needs.

Collocate	**Translation**	**T-score**	**MI Score**	**City**
še	Barley	*3.1*[305]	*5.3*	Girsu
še	Barley	2.6	2.3	Umma
še	Barley	*4.0*	*3.7*	Adab
še	Barley	1.2	3.0	Gasur
zi_3	Flour	*5.0*	*5.5*	Umma
zi_3	Flour	1.7	4.8	Adab
zi_3-gu	Pea-flour	0.9	3.9	Adab
dabin	Semolina	1.4	4.8	Girsu
dabin	Semolina	*3.4*	*6.0*	Adab
dabin	Semolina	*2.1*	*4.1*	Umma
ziz_2	Emmer	1.2	2.8	Adab
ziz_2	Emmer	0.7	1.9	Umma
imĝaĝ a_3	Spelt	1.0	9.7	Girsu
imĝaĝ a_3	Spelt	1.4	5.3	Adab
$niĝ_2$-ar_3-ra	niĝarra -Groats	1.4	5.0	Adab
ar-za-na	arzana-groats	1.0	5.0	Umma
za-tum	Flour	1.0	5.7	Girsu
še-numun	Barley seed	1.0	8.0	Gasur
sig_{15}	Quality designation	*2.2*	*5.2*	Umma
še-ba	Ration	1.4	5.5	Adab
ga-ar_3	Dairy product	1.0	6.2	Girsu

[304] The paucity of data from Gasur derives from its limited use of the full phrase gur *Akkade*. Many of the texts at Gasur do use the larger 300-$sila_3$ gur but without the explicit label; however, it is uncertain if all 300-$sila_3$ gur were gur *Akkade* or gur maḫ, or perhaps another local measure (e.g. gur *Marda* and gur *Gudamišum*).

[305] Again, statisically significant results are marked in *italics*.

i_3-nun	Ghee	1.0	4.5	Umma
ĝeš-i_3	Plant-oil	1.4	6.4	Adab
ku_6	Fish	0.9	3.3	Adab
zu_2-lum	Dates	1.0	6.3	Girsu
bappir	Beer-bread	1.0	6.7	Girsu
bappir	Beer-bread	1.4	5.3	Umma

Table 50: Commodity Collocates of the gur *Akkade*

Several of these results are not surprising given the local economy outlined in section 7.2.1. Girsu, Umma and Adab are focused on grain production and processing (zi_3, dabin, ziz_2). However, there are also some unexpected results. For instance, Girsu, known for its fishing economy, does not appear to send this commodity to the capital; rather at Adab fish are measured in the imperial capacity unit. Similarly, Adab contains archives attesting to the production of beer and breads, yet these are not associated with the imperial gur. In fact, outside of the staple cereals, each region seems to associate different goods with the imperial gur (e.g. beer, dates and the dairy product ga-ar_3 [Girsu]; fish, groats and oil [Adab]; *arsānum* groats, ghee and beer-bread [Umma]). Still this selection of products measured in the imperial capacity unit does not accord with the strengths of each local economy, suggesting either we have an incomplete view of the local economy, or production was dictated by means other than local preferences.

Through a comparison of commodities that are associated with the gur saĝ-ĝal$_2$, using the same parameters outlined above, the results of the gur *Akkade* take on a fuller meaning.[306] Aside from the basic barley, emmer and oil foodstuffs, there are specific preferences observed in the data. The milled flours and groats demonstrate a clear predilection towards the gur *Akkade*, but this is not an exclusive relationship. A closer look at ar-za-na, imĝaĝ a_3 and za-tum products shows that these goods were occasionally reckoned in other standards; however, the

[306] The texts from Gasur do not contain the phrase gur saĝ-ĝal$_2$, and therefore, have no collocates to offer to this side of the analysis.

overall tendency was to measure such refined products according to the standard promulgated by the imperial administration. The imperial center was most interested in the finished products from the grain harvest, with the local labor expended to process raw grains into flours.

Collocate	Translation	T-score	MI Score	City
še	Barley	*4.9*	*5.7*	Girsu
še	Barley	*5.3*	*4.0*	Umma
še	Barley	*3.5*	*4.8*	Adab
dabin	Semolina	0.8	2.0	Umma
dabin	Semolina	0.9	2.9	Girsu
zi_3	Flour	0.5	1.0	Umma
ziz_2	Emmer	0.8	2.1	Umma
ziz_2	Emmer	0.9	3.5	Adab
$niĝ_2$-ar_3-ra	niĝarra -groats	1.0	4.3	Girsu
$niĝ_2$-ar_3-ra	niĝarra -groats	1.0	4.2	Umma
sig_{15}	Quality designation	1.0	4.4	Girsu
sig_{15}	Quality designation	0.9	3.1	Umma
ĝeš-i_3	Plant-oil	1.4	7.0	Girsu
ĝeš-i_3	Plant-oil	1.0	7.2	Adab
kaš	Beer	*3.2*	*2.5*	Umma
kaš	Beer	0.8	2.1	Adab
zu_2-lum	Dates	1.4	5.3	Umma
mun	Salt	1.4	7.2	Girsu
^{ĝeš}ḫašḫur	Type of fruit	1.4	6.6	Girsu
$šum_2$	Onion	1.0	7.5	Umma
ninda	Bread	-0.8	-0.8	Umma

Table 51: Commodity Collocates of the gur saĝ-ĝal$_2$

Likewise, the complementary distribution between bappir in the imperial standard and kaš-beer in the gur saĝ-ĝal$_2$ is not as absolute as represented here. M. Maiochhi has noted that kaš-beer at Adab is closely linked with Semitic name-bearers and travelers, prompting his suggestion that this was a locally maintained commodity to support imperial agents moving around the empire (2012: 22). kaš and bappir in a variety of standards throughout the Old Akkadian corpus; however, the collocates are capturing and quantifying the specific patterns in these larger corpora. The negative results for ninda-bread at Umma indicate that this specific comestible actively avoids appearing with the gur saĝ-ĝal$_2$; this is not wholly surprising given the status of beer and bread as common rations to travelers.

Overall, the site of Adab exhibits a more productive use of the imperial gur, while Umma tends towards the gur saĝ-ĝal$_2$. If we follow the logic that those items rendered in the imperial standard were destined for the imperial administration, then the Akkadian kings did not practice any monopoly on specific items, but extracted portions of the local produce, with certain sites having specific specialties. Flours and oils are quite transportable and therefore more suitable for shipments of goods to the imperial capital. Certainly goods such as beer and breads were retained locally to support imperial staff at the expense of the local administration.

7.3.1.1. Summary

A closer examination of the metrology of the administrative texts in the Classical period evinces a bi-partite system comprised of the imperial administration claiming finished or fine goods and the local administration left to run the daily procedures and field operations. The level of intrusion appears minimal in Adab, Girsu, Umma and Gasur; this complements the limited role of royal agents in the Diyala sites. The larger corpora of Adab, Girsu and Umma enable the researcher to outline a more detailed reconstruction of which commodities were dispatched from individual cities. The evidence shows that cities tended to export different commodities in addition to the grain staples. Against the dichotomy of peaceful and rebellious areas at this time, this consistency suggests that there was not a large degree of difference in the treatment of specific cities by the Akkadian Empire. Whether this was due to an inability of the Akkadian kings to fully penetrate into the southern Sumerian states, or the presence of distinct local economic specializations still unknown is unanswerable at present. It is also possible that the inter-city centers founded by the Classical kings represent the anomaly in the system, demonstrating the varying and divergent administrative practices of the imperial administration without the filter of the local administration.

7.3.2. Transactions

Building upon the previous section, the investigation of transactions here seeks first to detail the relationship, if any, between the imperial gur and types of transactions. Second, these transaction types will be compared to those that collocate with the city of Akkade to assess if there is any commonality in the behavior. These results must be compared against similar comparisons with the other major cities to assure that the correlation is unique and therefore meaningful.

The parameters of this first collocate analysis are set for all words occurring within two slots after the key term "gur-a-ga-de3{ki}" in the collective texts from Girsu, Umma, Gasur and Adab. This boundary follows the syntax of both Akkadian and Sumerian that regularly place their verb at the end in administrative texts. Therefore, by looking at what follows the key term, the verb will be captured in the collocate field. The minimum frequency is set at one in order to capture all evidence.

Collocate	Translation	T-score	MI Score	City
šu ba-ti	Received	0.8	2.4	Adab
zi-ga	Credited	1.5	2.8	Adab
zi-ga	Credited	0.9	2.8	Girsu
la_2-ia_3	Arrears	1.3	4.2	Adab
la_2-ia_3	Arrears	1.0	4.6	Girsu
im-ḫur	He received (it)	1.0	5.6	Adab
e_3	Out-going	0.9	3.5	Adab
iš-te$_4$	From	1.0	6.9	Adab
a-na	To/for	1.0	5.6	Gasur
si-tum	Remaining debt	1.0	8.4	Adab
šu-ti-a	Receipt	1.0	5.9	Adab
gu_7	Consumed	1.0	4.4	Adab
mu-ku_x	Entered	0.9	3.0	Adab
$giri_3$	Via	1.0	7.3	Umma

Table 52: Transaction Collocates of the gur *Akkade*

From the more detailed probing in the preceding chapters, the imperial gur was associated with items going out (e_3) and coming into the administration (*ište*). Most notable was

its use in the monthly cattle fodder accounts from Ešnunna. One of the features linking the Gasur material with the Diyala is the receipt of goods (*yimḫur*) in the imperial measure, which is then issued out (e_3). This two-step process suggests either a redistributive system at work or the movement of goods up the hierarchy where the local administration acts as a middleman between local resources and the imperial center. However, none of the results are statistically significant, seriously curbing our confidence in any claims.

Any observations from this data only garner significance from comparison with the collocate distribution of the gur saĝ-ĝal$_2$. Again, the results lack statistical signficance; however, the complementary distribution of certain transactions types is intriguing.

Collocate	Translation	T-score	MI Score	City
la_2-ia_3	Arrears	0.8	2.3	Umma
šu ba-ti	He received (it)	1.3	3.7	Girsu
i_3-dab_5	He took (it)	0.9	3.0	Girsu
zi-ga	Credited	1.8	4.0	Umma
zi-ga	Credited	0.7	1.8	Girsu
i_3-na-$šum_2$	He gave (it)	1.0	7.5	Umma
iš-te$_4$	From	1.0	6.0	Girsu
i_3-tuku	He has	1.0	4.9	Umma
gi_4	He returned	1.0	10.1	Adab
i-di$_3$-šum$_2$	He gave	1.0	8.8	Girsu
i_3-si	He filled	1.4	6.5	Umma
ur_5	Loan	1.0	8.5	Adab
ga_2-ga_2-de_3	Placed	1.0	8.8	Girsu

Table 53: Transaction Collocates of the gur saĝ-ĝal$_2$

A key observation is the reciprocal use of the Semitic verbs *iddinšum* ("He gave it to him") and *yimḫur* ("He received it").[307] The receiving is associated with the imperial measure, while giving is connected with the local measure. This does not claim there is no overlap, but the

[307] There is only one collocate attestation of *i-di$_3$-šum$_2$* with the local gur, and therefore not suitable for further comment. The evidence for *im-ḫur* is more extensive and therefore expounded upon here. The presence of the Sumerian equivalent to *iddinšum* (i-na-šum$_2$) is sometimes used in the context of giving directly to Akkade (e.g. TBCI 1, 146; CUSAS 13, 29; L'uomo 17).

tendency is certainly suggestive. The link between the act of receiving and the imperial measure comments on the asymmetrical relationship between the local and imperial administration.

The appearance of ur_5 ("loan") in conjunction with the smaller $gur\ sa\hat{g}\text{-}\hat{g}al_2$ suggests, in tandem with the evidence from Tell Suleimah, that these transactions were typically reckoned in the local measure. Therefore, this was a local matter most likely distributed by the local governor and repaid there. The imperial center appears to focus on other aspects of resource acquisition, as argued above.

A final key observation in this comparison is the increased mention of travel in association with the imperial standard ($giri_3, e_3$).[308] This impression accords well with the evidence from Tutub and the unprovenienced "Diyala" material that showed a link between the imperial measure and travel (e.g. Tutub 49, MAD 4, 16, MVN 3, 57). The duplicate accounts MAD 4, 16 and MVN 3, 57 explicitly mention the royal palace in this context, linking the concepts of imperial measure with the imperial capital and the Akkadian king. In isolation, the evidence from Tutub is difficult to impart wider meaning to. However, once patterns from the smaller sites, such as Tutub, are combined with trends from larger cities, trends begin to form.

Moving away from the collocates of the imperial measure, a more direct avenue to the behavior of the imperial center is assessing the collocates surrounding the mention of the capital city itself. Specific attention is given here to the vocabulary of movement; this reduction in scope seeks to specifically illuminate the physical transfer of goods or people between city centers. Following the same logic cited above regarding the general syntax of the Sumerian and Akkadian languages, the collocate window will encompass up to two words to the right of the

[308] In previous scholarship, Maiocchi has observed a correlation between e_3 ("out-going") and imperial officials or metrology, maintaining that this specific lexeme "record[s] items more closely related to the imperial (re)distributive patterns" (2012: 20-21). This contradicts Z. Yang's original suggestion that e_3 denoted interdepartmental exchanges.

key term “a-ga-de3{ki}”. This lexeme is specifically the city and not an adjectival qualifier for the gur measure. Similarly, the minimum collocate frequency will be set at one to capture all co-occurrences.

Collocate	Translation	T-score	MI Score	City
(ma$_2$) ab-si	Boats were filled	1.4	9.4	Adab
i$_3$-na-šum$_2$	He gave (it) to him	1.4	5.6	Adab
mu-ku$_x$	Delivered	1.0	4.6	Adab
zi-ga	Credited	0.9	2.8	Adab
i$_3$-na-šum$_2$	He gave it to him	1.0	7.7	Umma
i$_3$-de$_6$	He brought	1.0	7.7	Umma
zi-ga	Credited	1.0	5.8	Umma
tum$_2$	Carried[?]	1.0	8.8	Girsu
šu-ti-a	Receipt	1.0	8.8	Girsu
tum$_3$	Carrying	1.0	7.8	Girsu
i$_3$-de$_6$	He brought	*2.4*	*6.9*	Girsu
im-gen-na	He went	1.0	5.5	Girsu
i$_3$-dab$_5$	He took over	1.3	4.1	Girsu
mu-ku$_x$	Entered.	1.6	3.6	Girsu
šu ba-ti	He received (it)	0.9	2.7	Girsu
ub-lu	They/he brought	1.0	12.5	Gasur

Table 54: Collocates for the city Akkade

As noted in the previous discussion, travel is a common feature across all sites in relation to the imperial capital, whether of goods or people. Similar terminology appears across the major centers with the exception of Gasur, which continually prefers to render its verbs in Semitic instead of Sumerian. An asymmetrical distribution also emerges between credits and debits; the items moving towards the imperial capital (“brought,” “went,” “gave,” etc.) are locally credited, supporting the paradigm that the capital and king held all accounts from the individual city-states.

7.3.2.1. Summary

The practice of issuing, maintaining and recalling individual loans appears to be consistently a local matter. This broader trend recasts the Diyala practice as representing the local government, which in turn embeds a more local flavor to the administrations represented by

the texts of Ešnunna, Tutub and Tell Suleimah. Conversely, travelling continues to be linked with the Empire through both the imperial gur and the capital city, building on a correlation also established in the preceding section.

The inflow and outflow of goods appears neatly reciprocal in relation to the capacity measures; those items received are more likely to be rendered in the imperial measure, and those comestibles leaving the central institution tend toward the smaller gur saĝ-ĝal$_2$. The underlying principles for this paradigm are not readily apparent. Since both terms are in the Akkadian language there is no predisposition towards the Semitic culture or the Akkadian Empire for either *yimḫur* or *iddinšum*. The act of taking, amassing and acquiring various goods in the imperial measure certainly suggests an asymmetrical quality in the imperial-local relationship. This dynamic is consonant with the general expectations of empire and, therefore, not surprising (see Section 1.4).

7.3.3. Prosopography

In conjunction with the types of commodities and transactions associated with the imperial measure introduced under the Reforms of Narām-Suen is the consideration of the individuals and offices that co-occur with the imperial marker (i.e. Akkade). The prosopographical links indicate some relationship with the imperial administration that can then be evaluated through a detailed analysis of the source material. The target words "gur-a-ga-de3{ki}" and "a-ga-de3{ki}", representing the imperial measure and the capital city, respectively, will be used in a collocate search to illuminate the strongest relationships. Following the normal syntax of the administrative records, the collocate window will be set to two words to the right of the imperial measure, and two words to the left for the capital city.

Diverging from the previous sections, the minimum frequency is set at two in order to capture only the strongest associations.[309]

The following tables summarize the results of the collocates for the imperial measure.

Collocate	Translation	T-score	MI Score	City
bi_2-za-za	Personal Name	1.7	7.0	Adab

Table 55: Adab Collocates for gur *Akkade*

Through the parameters of the collocation search, the individual Bizaza is noted three times in conjunction with the gur *Akkade*; however, following the results of the collocation process, the connection between Bizaza and the imperial measure becomes stronger. Bizaza also occurs with the gur *Akkade* but appears outside the two-word window. While the narrow window is necessary for reducing false positives, it also excludes collocates across larger spans, upwards of twenty words.

Where noted, Bizaza occurs exclusively with the imperial measure at Adab. In his transactions he is receiving various goods and then exporting them, presumably towards the imperial capital. As noted by M. Maiocchi in his study of Classical Sargonic texts from the city of Adab, Bizaza's accounts generally record "outlays (è) of barley for oxen or for rations to people who are referred to either as $arad_2$-lugal 'king's servant' or guruš-guruš 'workers'. Most of the texts are written in Akkadian and/or make use of the gur of Akkad" (2012: 20-21, fn. 37). From his analysis of Bizaza's archive,[310] he concludes that this figure was "the official in charge of receiving barley to be stored in Adab and to be distributed as rations to subordinates of the

[309] Due to the lack of explicit mention of the imperial measure in the Gasur corpus, similar to the Diyala corpus, there are no collocates to report. Moreover, the low frequency of the capital, Akkade, does not yield any collocates that exceed the minimum of two attestations.

[310] Adab 717, 806, 910, 948, 966, 967, 976, 1099 (all found together in a single jar in Mound III).

king and to people involved in breeding activities" (2012: 8).[311] Through the figure Bizaza, the imperial administration becomes associated with cattle management in the Adab region. Furthermore, Bizaza appears to be one of the links between the imperial administration and the local administration during this time.[312]

The material from Girsu demonstrates no prosopographical links with the gur *Akkade*, primarily due to the low frequency; this lack of correlation is also a meaningful indication, possibly suggesting a difference in the manner of administration compared to the other major centers under discussion here. This can only be borne out by further contextual evidence.

Similarly, the only collocates with the imperial capital derive from the frequent implementation of seals on administrative texts.[313] The rote phrasing of the seals is reflected in the significantly high collocations reported below.

Collocate	Translation	T-score	MI Score	City
dingir	Deity	*3.5*	*8.4*	Girsu
^{d}Narām-Suen	Fourth Akkadian King	*2.8*	*8.3*	Girsu
da-num$_2$	Strong One	*2.2*	*8.3*	Girsu
lugal	King	*2.2*	*5.7*	Girsu
ensi$_2$	Governor	1.7	4.4	Girsu
Šar-kali-šarrī	Fifth Akkadian King	1.4	5.6	Girsu
dub-sar	Scribe	1.3	3.9	Girsu

Table 56: Girsu Collocates for Akkade

Even the collocation with the governor is a reflection of the year names that often record "when the governor went/carried (it) to Akkade."

[311] It is not readily clear to me how fattening (niga) is explicitly linked with breeding activities. I prefer to see the fattening as linked with feeding elite, religious and royal households, which would naturally be entitled to and/or pay for the best foodstuffs available.
[312] Perhaps this relationship between the Akkadian Empire and Adab was negotiated through the e$_2$ *Akkade* ("household [of] Akkade") (CUSAS 13, 58). This text clearly demonstrates the Empire's interest in labor, inclusive of women and children. This is partially supported by TCBI 1, 206, which records the number of dead women and children *in* Akkade.
[313] This is similar to the results from Adab of those individuals associated with the imperial capital, however, at Adab the results are circumscribed to only the lugal and Šar-kali-šarrī. These paltry results do not warrant full exposition since they are part of the same phenomenon at Girsu discussed here.

The collocates for the imperial measure from Umma capture both personal names and a key official title. Unfortunately, there are no collocates with the capital Akkade within the parameters of this specific search. Therefore, the following discussion pertains only to information from the imperial measure collocates.

Whether Mama-ḫursaĝ who figures prominently in the beer texts is the same individual as that mentioned in association with the imperial measure is difficult to prove. Through this collocation search, Mama-ḫursaĝ is responsible for flours, often of a coarse quality. It is possible that the Mama-ḫursaĝ mentioned in the beer accounts is the same as the Mama-ḫursaĝ of the flour accounts; M. Maiocchi has demonstrated that there is a link between kaš-beer receivers and Semites, or travelers potentially associated with the imperial administration at Adab (2012: 22).[314] If this assocation holds for the Umma evidence, then the Mama-ḫursaĝ associated with the imperial measure and the receipt of kaš-beer both support a single individual and his relationship with the imperial administration. This interpretation is further supported by the intersection of these collocates in the same accounts.

Collocate	Translation	T-score	MI Score	City
ma-ma-ḫur-saĝ	Personal Name	1.4	4.5	Umma
da-da	Personal Name	1.3	3.8	Umma
šabra	Majordomo	1.3	3.7	Umma

Table 57: Umma Collocates for the gur *Akkade*

Several of these figures are linked together through various texts; for example, the letter FAOS 19, Umma 2 is issued from the household of the šabra to Mesaĝ, instructing him to give various oils and dairy products to Dada.[315] As demonstrated in section 7.3.1.1, these types of

[314] Not to mention the explicit description of the rations of Akkade being bread and beer specifically (CUSAS 19, 107).
[315] The popularity of this name together with the overall lack of clear a patronymic, office or other identifying qualifier prohibit detailed statements about Dada's role here.

products are more closely associated with the gur *Akkade*. Similarly, Mama-ḫursaĝ of the beer accounts is a regular recipient of kaš-beer alongside the household of the šabra .

The office of the šabra was certainly held by multiple individuals throughout the history of the imperial administration at Umma, and each major household maintained its own majordomo.[316] However, the behavior of the office should remain consonant with imperial policies and not individual whims. This sketch supports the idea that the šabra was an imperial agent who managed the royal interests amid the local economy, drawing the required resources for provisioning beer and bread rations to imperial agents.

7.3.3.1. Summary

Only three individuals were discovered by the collocate search as being associated with the Akkadian Empire through either the imperial measure or the city Akkade. In addition to Bizaza, Dada and Mama-ḫursaĝ is the šabra , a representative of the royal household. The šabra more than any other official is expected because of his close association with the king, and therefore, the Akkadian Empire. The absence of any individuals or officials from Girsu is surprising given the size of the corpus and its substantial activity with Akkade. This could be due to faulty parameters in the search criteria, a local peculiarity of omitting agents in the laconic administrative texts, or some other plausible explanation.

The tallying of collocates will only enable the researcher to delve so far into the complex and fluid networks that are closer to the reality underlying the administrative records. The use of Social Network Analysis (SNA) enables researchers to recreate a two-dimensional model of a web of intersecting and adjoining interactions between numerous actors in a delimited time and

[316] Typically, the šabra is qualified with "household" (Sumerian: e_2; Akkadian: *bētum*); however, in MCS 9, 245 there is the unique attestation of the šabra tug_2 ("majordomo of the garment"), suggesting a rather large textile operation at Umma, possibly under the aegis of the Akkadian kings.

place.[317] This next section builds upon the comments from the prosopography section to further expound upon the intermediate relationships of the imperial agents embedded in the local administrative matrix.

7.4. Networks

The relationships depicted in the following networks represent a binary function where either a connection is present or absent in the textual record. One of the major issues in working with ancient sources is the chance of preservation and recovery; however, this cannot bind our hands completely against all inquiry, since new discoveries may alter the shape of the network in the future (Erickson 1997: 151). As M. Alexander and J. Danowski comment, the purpose of SNA is not to claim certainty (i.e. always the case, never the case), but rather to demonstrate something to be significantly common or rare (1990: 314).

The individual actors are largely people, but added to this are a few offices represented where specific names are absent in the texts. A second major issue embedded in all prosopographical work is the problem of homonymy—those distinct individuals who share the same name.[318] The judgments on assigning identity must be made with contextual evidence; this must be balanced by the careful consideration that subjective judgments of personal identity do fully influence the results of the network. Two researchers may never build a network in exactly the same way, but, hopefully, the overall structure remains constant.

7.4.1. City Networks

This section specifically addresses the networks of individual cities under the Akkadian Empire. The focus is on the internal connections and interactions, not on external relationships.

[317] The purpose of SNA is not necessarily to reveal new discoveries, but to demonstrate a more objective methodology of supporting or refuting existing tenets (Alexander and Danowski 1990: 317).
[318] Whether one searches for John (and all its European derivatives), Wei or Muhammed, the frustration remains the same.

The data is circumscribed to the networks formed by titled individuals, not craftsmen, artisans, laborers, etc. While this does create an inherently incomplete network, the purpose is to concentrate on the upper levels of the administration that were more likely to interact with the Akkadian Empire. This *milieu* appears to be the best avenue for accessing this dynamic.

7.4.1.1. Ešnunna Network

The network(s) of the royal family are central to any inquiry into the imperial administration for they are at the heart of the empire. The following network is a recreation of royal ties from Classical period Ešnunna and will be used comparatively. The central figure for the royal family is Tūta-šar-libbīš, wife of Šar-kali-šarrī; through her, a latticework of personal connections proliferate forming a complex network in the local administration.[319] This network includes several bureaucratic offices that interacted, albeit indirectly, with the royal network. In this administrative network there are 74 nodes creating 248 edges. For illustrative purposes, a node for each office was created; this is an artificial heuristic tool intended to elucidate connections that are implicit in the data.

At first glance this network may appear as a nonsensical skein; but by focusing on the bridges—the unique links between two smaller groups—and clusters, information pathways become clearer. Location in networks is crucial to understanding power and influence; those that serve as bridges hold some form of a monopoly on information or resource transmission and subsequently increase their social capital (Waerzeggers forthcoming: 4).

[319] Individuals are portrayed with blue nodes and offices (i.e. šabra, dub-sar, ensi$_2$) are in yellow. Geographic names are shaded in orange and deities are marked in red. The darker the edge (i.e. line) (in purple), the stronger the relation is.

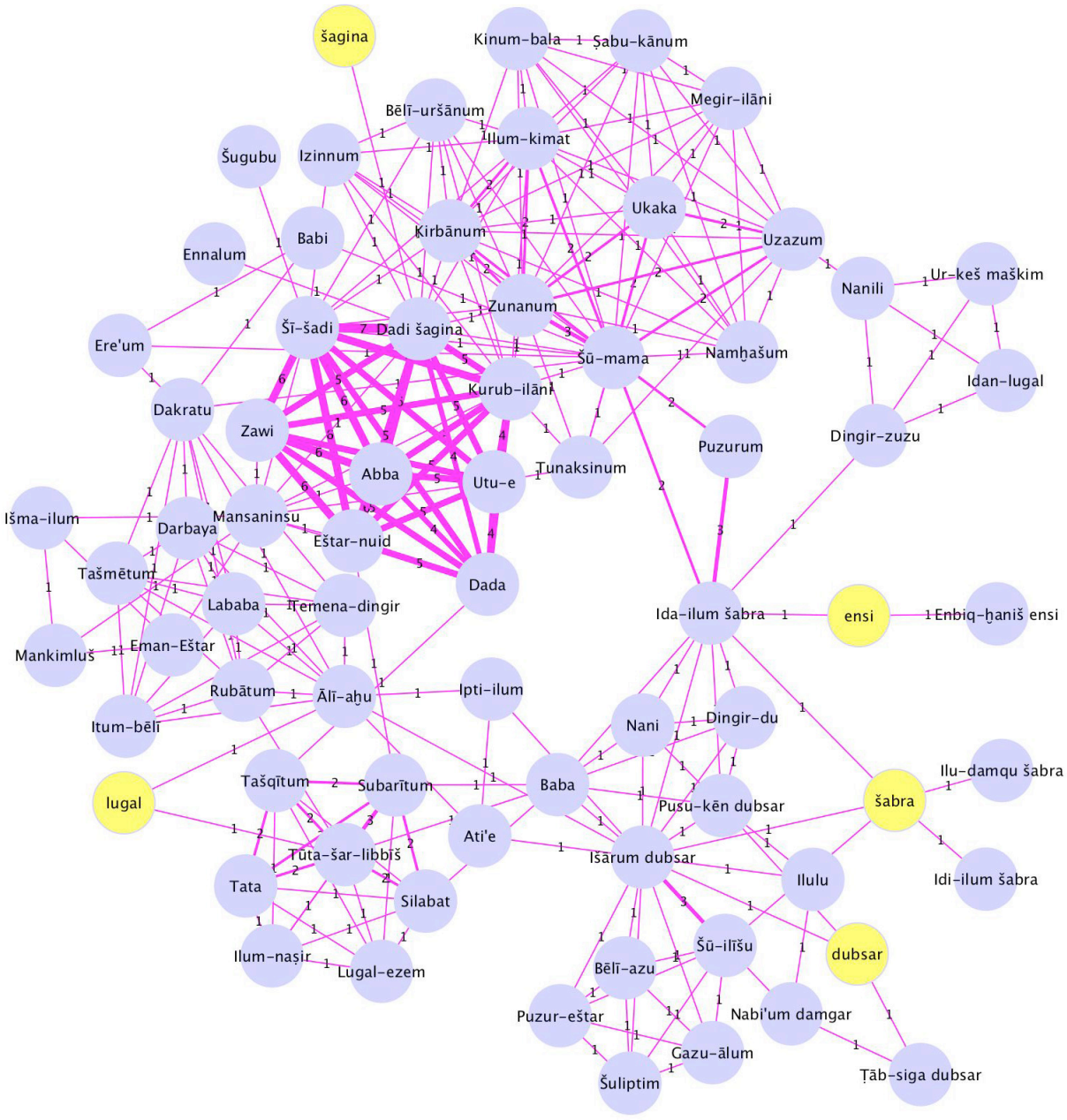


Figure 22: The Royal Network at Ešnunna

The overall organization of disparate clusters connected by narrow bridges is expected of an administration compared to, say, kinship relations. Using the algorithms underlying the

visualization of the raw data both hubs and bridges can be identified. The most active nodes are presented in the following table.[320]

Node Name	Betweenness Centrality (hubs)[321]	Node Degree (bridges)[322]
Šū-mama	.40	20
Išārum dubsar	.25	17
Dadi šagina	(.11)[323]	16
Zunanum	(.02)	15
Šī-šadi	(.08)	15
Kurub-ilāni	(.06)	15
Kirbānum	(.02)	14
Ilum-kimat	(.02)	14
Ida-ilum šabra	.33	(10)

Table 58: Bridges and Hubs in the Ešnunna Network

Despite the fact that most agents in the Ešnunna network do not bear titles, it is the titled officials that serve as the main hubs and bridges for information flow. Šū-mama is the central figure for the entire network possessing both the highest number of connections to other actors and serving as the main bridge between his own sub-cluster and that of the governor (Sumerian: $ensi_2$), majordomo (Sumerian: šabra), and scribes (Sumerian: dubsar). In fact, the relationship between Šū-mama and Ida-ilum, the šabra , is the major bridge in the entire network, linking what may be local elites with the local administration through the figure of the šabra .

The royal network, posited through Tūta-šar-libbīš and Ālī-aḫu, are not directly connected to the administration at Ešnunna. Tūta-šar-libbīš is part of a cluster of men and women who receive regular ration allotments, but they have limited interaction with the other actors in

[320] Selecting the "most active" nodes is a subjective process, but typically there is a marked decrease in strength for both node degree (hubs) and betweenness centrality (bridges) after the first one to five nodes in a network. Where possible, these "natural" boundaries are utilized for determining the "most active" nodes.

[321] To review, the betweenness centrality of a single node falls between zero and one. The closer the result is to one, the more or denser subnetworks it connects.

[322] This measurement is a simple tally of all the first neighbors (i.e. direct connections) of the target node. This is a relative measurement largely dependent on the overall size of the network. Smaller networks will typically exhibit lower node degree values.

[323] Values presented in parentheses indicate that this is not a significantly high value, but is included to avoid the impression through the table layout that no measurement is associated with the specific node. Only those values outside of parens are interesting data for the network.

the network. Conversely, Dadi, the general (Sumerian: šagina) is embedded in a dense subnetwork with numerous connections to the Šū-mama cluster. His position, separated from the other administrative offices (ensi$_2$, šabra , dubsar), suggests that the military branch of the administration at Ešnunna was not strongly linked with the bureaucratic arm of the administration.

With these observations it is now possible to compare the structural organization of the ašdministration of Ešnunna with the corpora from other sites and attempt to answer whether this structural organization is homologous to the other urban centers during the reign of the Classical Sargonic kings?

7.4.1.2. Adab Network

A discussion of the organizational structure of the various southern Mesopotamian city-state administrations must start with Adab because of the completeness of its archive in this study. The corpus, and consequently its network, is the largest included in this dissertation with 519 nodes creating 2,088 unique relations. Also due to the breadth of this corpus is the inclusion of a larger number of administrative offices, which are likely present in the Diyala corpora but are not preserved in the extant record.

The major hubs and bridges are summarized in the table below. For bridges, the šabra has the highest value in the network and in conjunction with the ensi$_2$ also serves as the largest hubs at Adab.

Node Name	Betweenness Centrality (hubs)	Node Degree (bridges)
ensi$_2$	.14	58
šabra	.18	58
eš-gid$_2$	.11	55
ma-laḫ-gal	(.06)	46
e$_2$-gal	.12	44
nin-dingir Nin-Šubur	(.04)	39
gala-maḫ	(.02)	37
sukkal	.11	36
sagi	.13	32
Mesaĝ	(.07)	31

Table 59: Bridges and Hubs in the Adab Network

The major bridges and hubs in the Adab network are consistently offices or institutions that, as noted above, are artificial creations in the network. The lone exception is the figure Mesaĝ, who may be synonymous with Mesaĝ the cup-bearer.[324]

Similar to the royal network at Ešnunna, the imperial ruler (i.e. the king) and the local governor are not directly connected; only through the temple complex and the šabra are the king and the governor connected. It is specifically Šū-mama šabra, Abba šabra, Dada Lugal-lu saĝ aga-nin ("head of the followers of the queen") and Išār-bēlī dubsar šabra ("scribe of the majordomo") that operate as the main direct conduits of interaction between the ensi$_2$ and šabra. Without these actors as a bridge the administrative offices divide into two separate networks: one connecting the lugal, šabra and sukkal (Akkadian: *sukallum*; "civil servant"), the other linking the governor to the temple complex.

[324] Individuals are kept separate in the network, especially for this first attempt, unless they share a title, patronymic or regularly occur with the same cluster of individuals. One of the goals of SNA is to identify likely candidates in the cuneiform texts that are in fact one in the same individual.

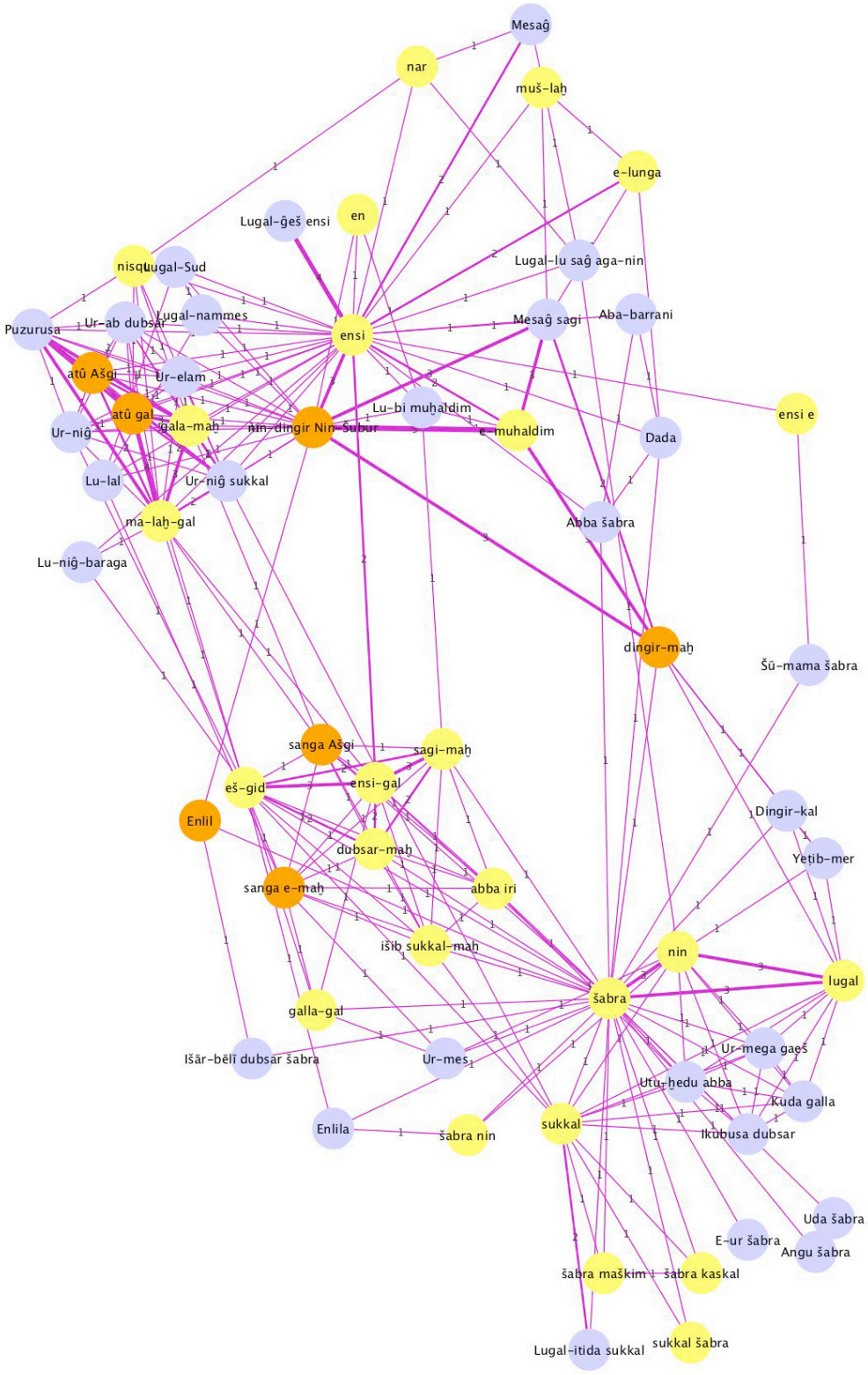


Figure 23: ensi$_2$ to šabra Network at Adab

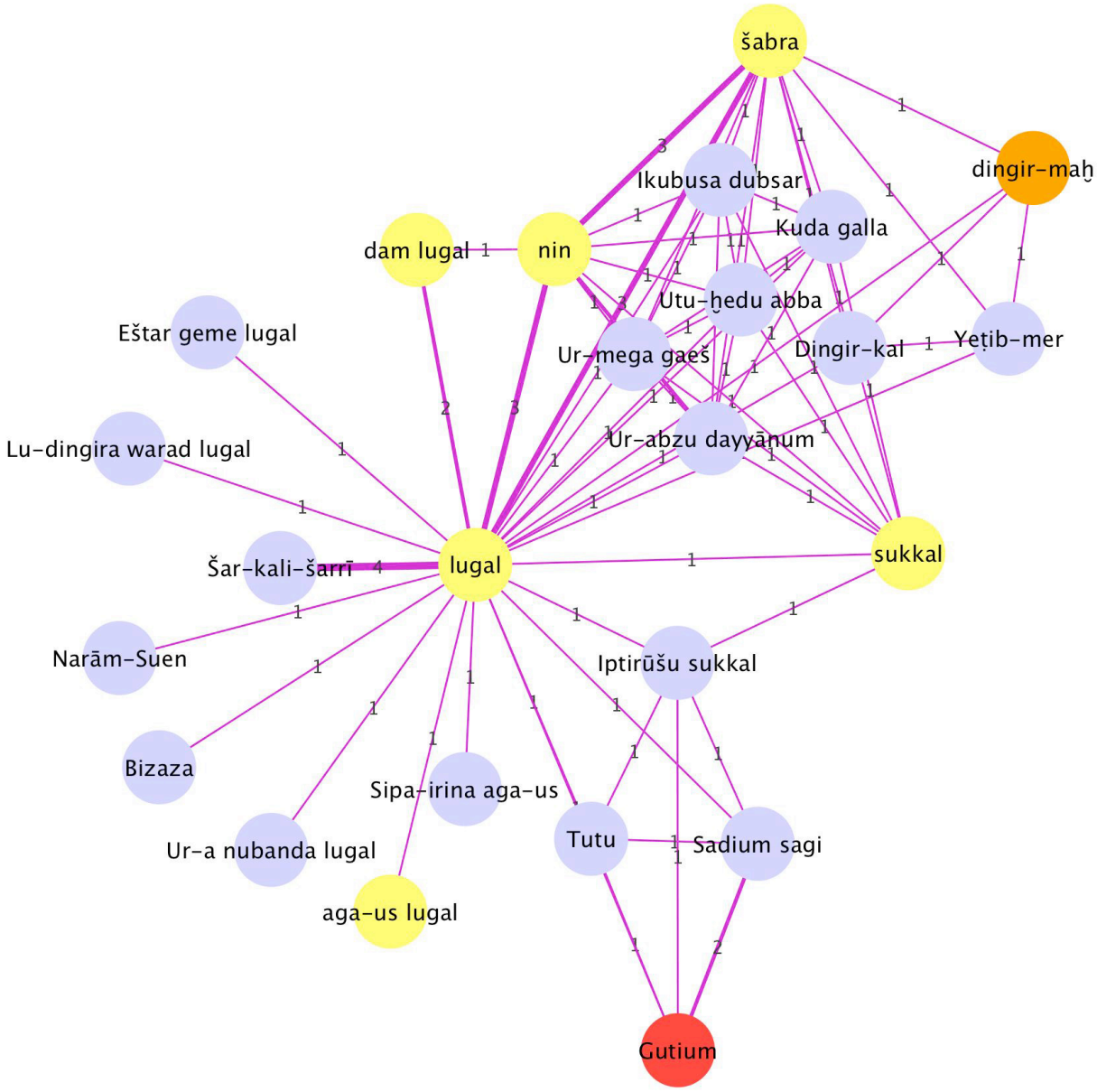


Figure 24: The lugal Network at Adab

This network of the first neighbors (i.e. a direct connection) of the king in Figure 25 shows the royal family closely tied to the šabra office, but also bound up in the lattice of connections between the šabra and the sukkal. Similar to the organization observed at Ešnunna, the general (Sumerian: šagina) is relatively isolated, only connected to the king through Sipa-irina aga_3-us_2 ("follower of the crown").

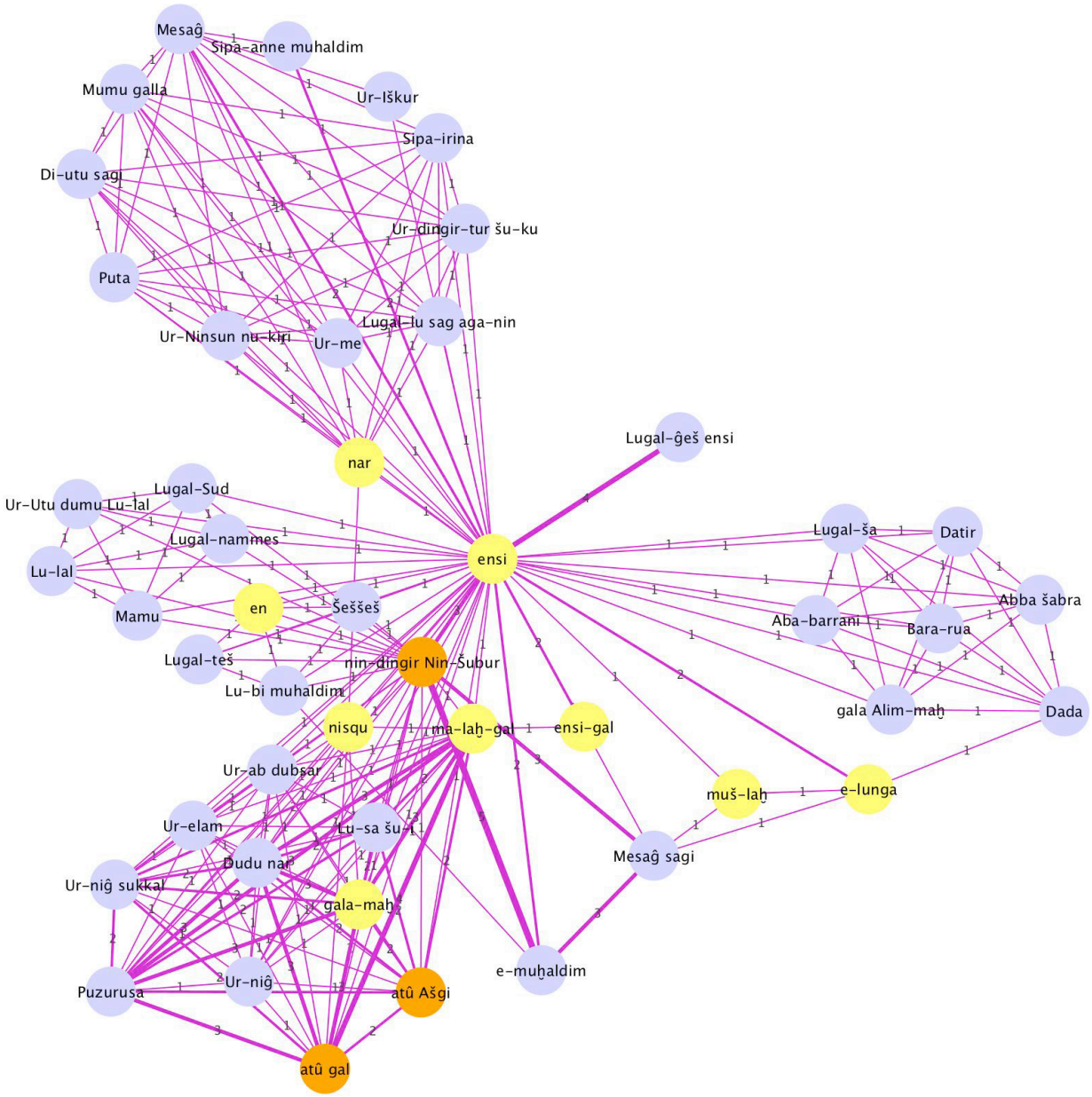


Figure 6: ensi$_2$ Network at Adab

Contrary to M. Maiocchi's statement that the temple does not figure prominently into the texts, this network analysis demonstrates that it maintains relations with important members of the administration. Through this presentation of the first neighbors of the governor it becomes clear that temple personnel were closely linked with the local ensi$_2$. The governor himself serves as a bridge between several clusters that appear roughly divided along the categorization

of the temple sector (en, nin-dingir, *atû*), šabras (Abba and Dada) and lower-level personnel (nu-kiri$_6$, šu-ku$_6$, muḫaldim). While SNA does not affirm or deny any level of authority imparted or exercised by the temple sector, the cultic agents certainly appear active in the upper echelons of the Adab administration.

7.4.1.2.1. Bizaza Network

The collocate analysis in section 7.4.3 suggested that Bizaza was closely associated with the imperial administration at Adab through the use of the imperial measure. Through the added level of SNA this association gains more contours; while Bizaza is shown attached to the king in one account, his other texts are silent on his administrative affiliation (not particularly abnormal). Bizaza is otherwise unattached to the upper levels of the administration at Adab, yet his association with the fattening of livestock, a practice reserved for only the comestibles of the highest officials in Mesopotamia, is certainly suggestive. Still, the correlation demonstrated here between the imperial measure and the king through the figure Bizaza supports the claim that the gur *Akkade* was in fact used for imperial property.

7.4.1.3. Girsu Network

The next largest network included here is Girsu with 433 nodes and 1,400 unique relationships. As with the Adab network, there are sub-networks detectable within the administration; again, the major hubs are offices (ensi$_2$, dubsar, šabra), but, contrastingly, more individuals (Dada, Alu, Ur-Šara, Yeṭib-Mer) appear in this role than at Adab. Similar to the Adab network, the šabra s act as the intermediary between the king and the governor. Without this link the network again divides into two parts: one network constituted by the lugal, šabra and šagina; another by the ensi$_2$ and the temple domain via the sanga. The most prominent hubs and bridges are summarized in the following table.

Node Name	Betweenness Centrality (hubs)	Node Degree (bridges)
ensi$_2$	.29	40
dubsar	.21	34
šabra	(.07)	33
Dada šabra	(.08)	30
Alu sanga	(.05)	29
Ur-Šara	(.06)	29
Yeṭib-mer	(.04)	29
lugal	(.11)	25

Table 60: Hubs and Bridges in the Girsu Network

Through the šabra , the king is also connected to the military via the office of the šagina. It is specifically Bēlī-uršānu, Yeṭib-mer and Šarru-ṭāb that act as the main connectors between the military and royal branches. These names, interestingly, are familiar from the royal networks at other sites during this period.

The figure of the sukkal is more disconnected than at Adab, indirectly connected to both the governor and the generals. The level of their participation at both Adab and Girsu is relatively weak compared to other offices. Provisionally, the sukkal appears to associate with those occupations that move between cities, either as a soldier (Sumerian: aga$_3$-us$_2$), a messenger (Sumerian: lu$_2$ kin-gi$_4$-a; Akkadian: *mār šiprim*) or a trading agent (Sumerian: ga-eš$_8$; Akkadian: *ga'iššum*). Contrastingly, the sukkal-maḫ is more closely associated with the temple sector and land management, and consequently more closely connected to the šabra than either the ensi$_2$ or the šagina .

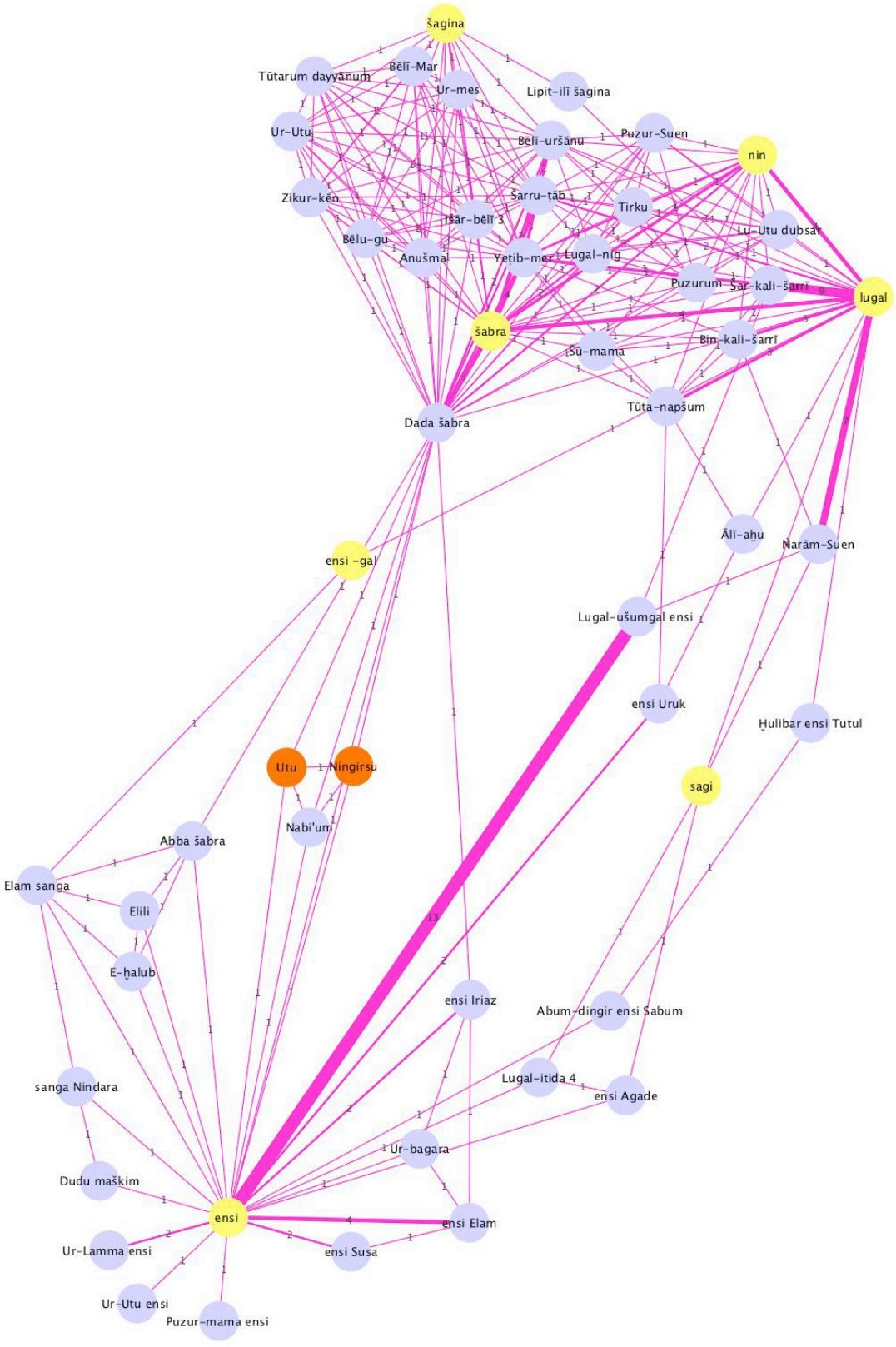


Figure 26: lugal and ensi$_2$ Network at Girsu

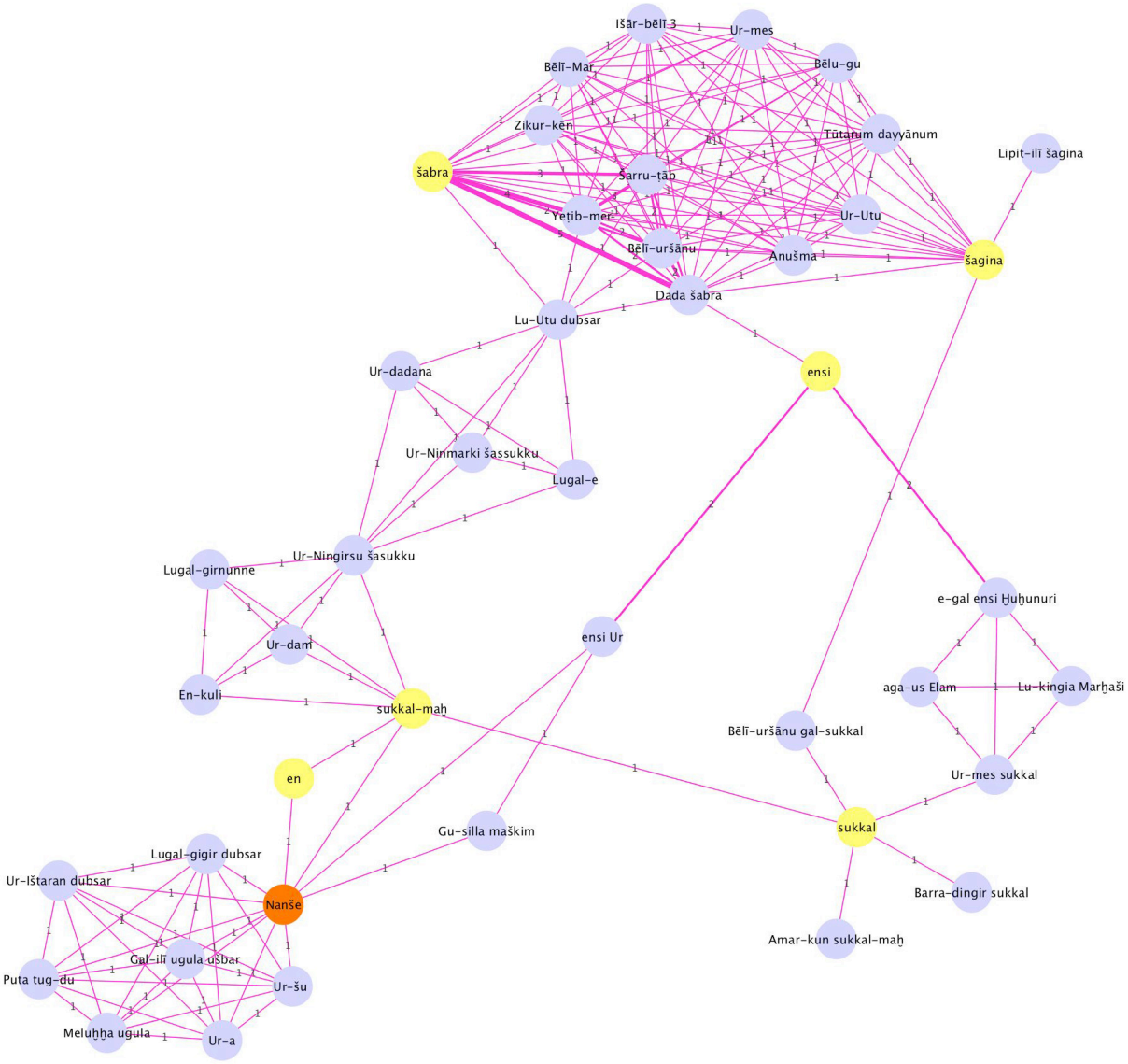


Figure 27: sukkal Network at Girsu

7.4.1.4. Umma Network

Although the network at Umma consists of only 275 nodes, it still garners 1,643 unique relationships, suggesting a highly compact, yet dynamic, organization. This is reflected in the relatively high value of the node degree distribution.

Node Name	Betweenness Centrality (hubs)	Node Degree (bridges)
šabra	.24	72
Šamašin	(.04)	65
Šū-ilīšu	(.05)	63
lugal	.18	63
Mama-ḫursaĝ	(.04)	58
dubsar	.20	(32)
maškim	.14	(37)

Table 61: Bridges and Hubs in the Umma Network

As outlined in the table, the šabra is the main figure in the Umma network serving as both the major hub and bridge for the various agents in the administration. The governor is notably absent from the main centers of information and/or interaction concentration at Umma. Consequently, the sub-networks divide along different lines than at Adab and Girsu with one system engaging the sukkal, šagina and šabra, and the other the king, and a third the governor. At Umma, the generals are frequently associated with local toponyms, suggesting that during the period of record the military focus was on the southern rebellion and not in the far reaches of the Mesopotamian world.[325]

The king has limited direct connection with the šabra; rather it is through the positions of the galla, sukkal and dubsar, and the untitled individuals Gusilla and Dingir-kal, that the king and individuals closely associated with him in the texts form Umma gain more open access to the šagina and šabra. Here the galla serves as an intermediary between the king and his general, which supports the interpretation of the galla as a sort of conscription officer. Unlike the trend observed in the networks from Ešnunna, Adab, Girsu and Gasur, the presence of the royal family at Umma is significantly reduced. Moreover, the individuals, Yeṭib-mer, Bēlī-uršānu, Abba and Dada, familiar from other sites, are not present in the administrative network at Umma.

[325] Lagaš, Šuruppak, Irisagrig, Uruk, Gasur, Adab and Ḫašuanum. Contextually, this last toponym is likely in the periphery, but its precise location remains unknown (Edzard, Farber and Sollberger 1977: 70-71).

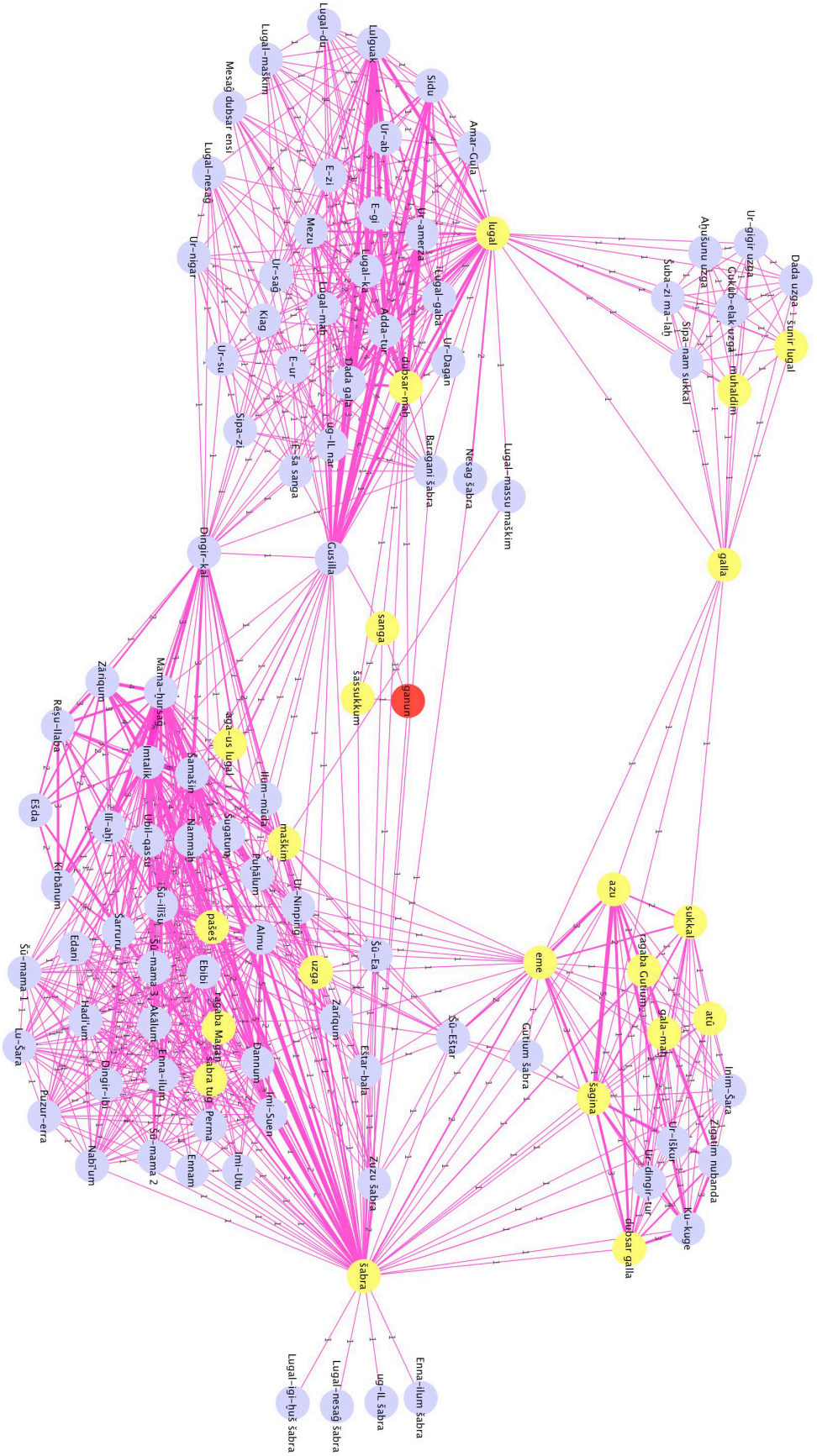


Figure 28: lugal and šabra Network at Umma

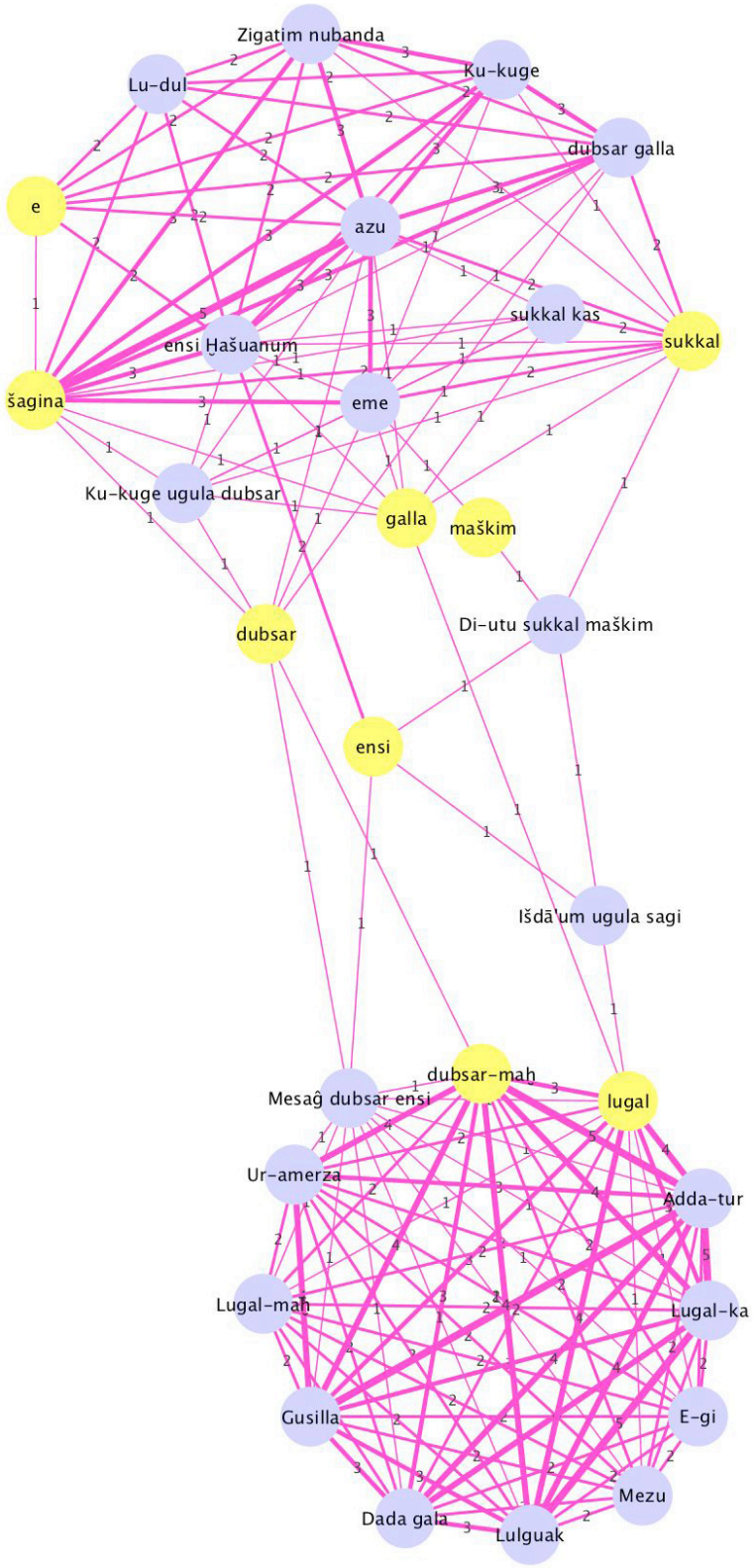


Figure 29: ensi$_2$ Network at Umma

7.4.1.4.1. Mama-ḫursaĝ Network

As shown in Figure 29, Mama-ḫursaĝ, who was singled out in Umma's collocate analysis in section 7.3.3, is enmeshed in the šabra network, but also connected to Gusilla and Dingir-kal, the crucial bridges into the royal network. This bridge becomes important because, unlike the other cities in this network analysis, at Umma the šabra and the king are not part of the same sub-network. Mama-ḫursag's association with the šabra is not sufficient to link him with the royal household at Umma. The results of the collocation and network analyses reinforce each other, imparting confidence in the association between Mama-ḫursaĝ and the imperial administration.

7.4.1.5 Gasur Network

The small size of the Gasur corpus in comparison with those from Adab, Girsu and Umma results in a paucity of administrative titles and functions. As generally commented upon, there is no temple sector easily detectable at Gasur.[326] Similar to the Diyala material, this obstructs any attempts to compare these northern regions with the Mesopotamian heartland in terms of how the temple and palace interacted. I must issue here the traditional adage, "absence of evidence is not evidence of absence," for there certainly were temples and shrines in these areas. However, we do not yet have sufficient representation in the textual material to incite any claims.

Regardless, the network at Gasur consists of 158 individual nodes and 566 unique relationships. The major hubs and bridges are presented in the table below. Departing from the trend observed by the previous three sites, the ensi$_2$ and šabra are not the most central figures

[326] Although the prevalence of Zuzu, a cadaster official, would suggest temple management of lands at other urban centers, it is not certain if this analogy can extend to Gasur with its cultural nuances.

in the network at Gasur. Instead the king and Zuzu, a cadaster official, dominate the pathways of the Gasur network.

Node Name	Betweenness Centrality (hubs)	Node Degree (bridges)
Zuzu *šassukku*	.26	32
lugal	.31	30

Table 62: Bridges and Hubs for the Gasur Network

Similar to Adab, Girsu and Ešnunna, the king at Gasur is connected to the local governor through the subnetwork of the šabra . The royal network also has direct access to Zuzu, the main cadaster official at Gasur, and the trading agents (Sumerian: dam-gar$_3$). In fact, the local governor does not appear to have easy or direct access to the central official in charge of land, a key component to their economy. Only through the royal network and the office of the šabra is Zuzu accessible. This is a critical comment on the source of power at Gasur during this time; it appears that the imperial leader was able to penetrate deeper into the local administration. This practice corresponds to that observed at Ešnunna via the cattle fodder accounts distributed to individuals associated with the royal household. The šabra remains the buffer between the empire and the city for Ešnunna, Gasur, Adab and Girsu.

7.4.1.6. Summary

Overall, the structure of the imperial administration at different cities throughout the Akkadian Empire appears relatively stable and consistent. The šabra acts as an intermediary between the king and the governor. In fact, there appears to be a chain of interaction proceeding from the king, to the šabra , to the šagina, to the sukkals and sangas, and finally to the governor. This is not a rigid hierarchy since the king and governor can be minimally connected through the šabra . The exception appears to be Umma, which shows a more removed king from the official networks. This anomaly, however, appears consistent with B. Foster's recognition of loca peculiarities that distinguished Umma from other Mesopotamian urban centers. In

conjunction with the observation in section 7.3.1 that Umma tends towards the gur saĝ-ĝal$_2$ instead of the imperial measure, and lacked both a marked presence of the royal family and the mobile administrators present at Adab, Girsu and/or Ešnunna, the idea that Umma was perhaps not as integrated into the Akkadian Empire as Girsu, Adab, Ešnunna and Gasur begins to crystallize.

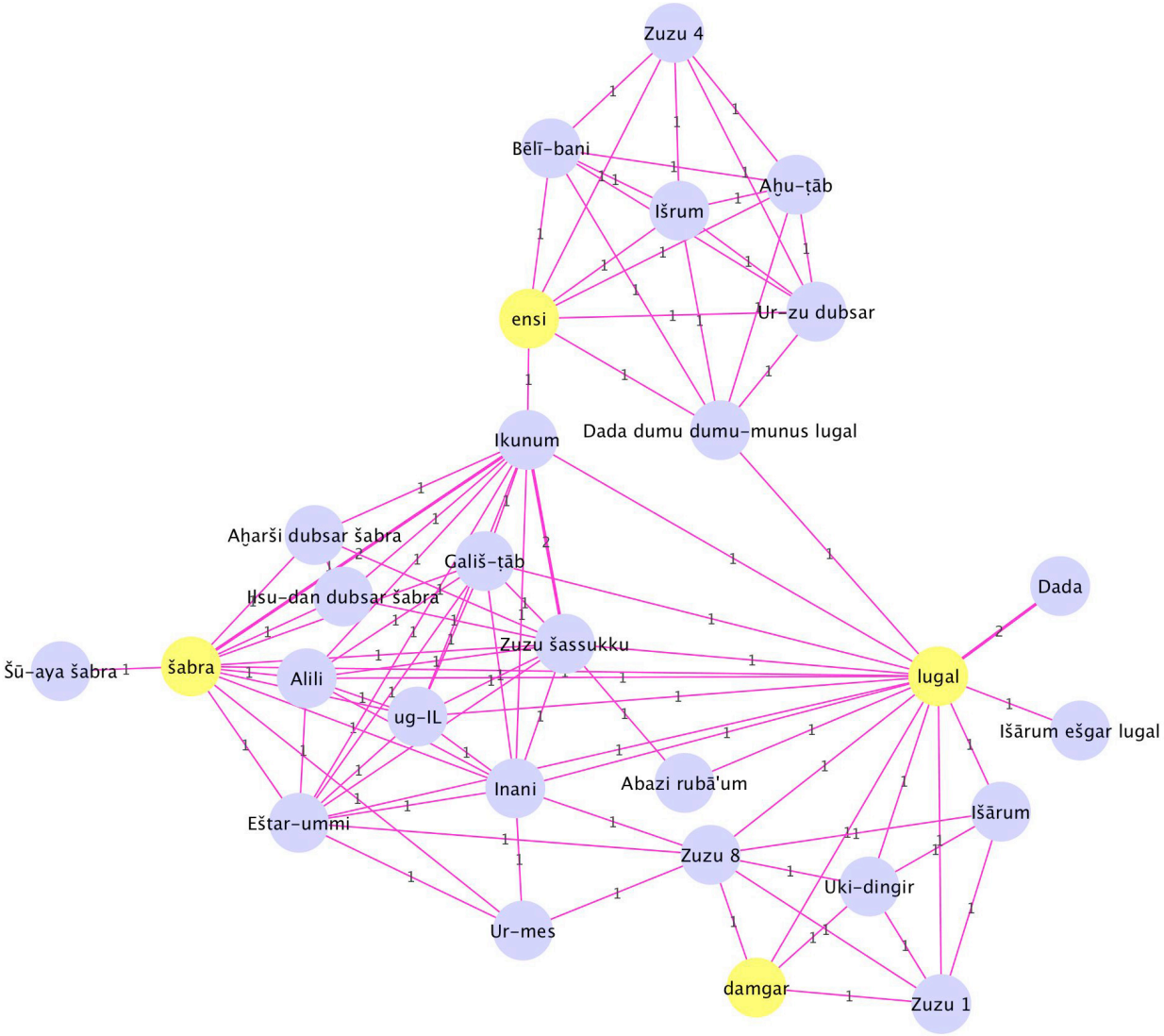


Figure 30: Gasur Network

7.4.2. Imperial Networks

From the vantage point of a multi-city, top-down analysis, several figures appear across different cities. Although many names do not bear its official qualifier, the context suggests that certain high-ranking individuals were part of a mobile imperial apparatus separate from the local offices. The šabra Abba appears in both the Adab and Girsu administrations attached to the king,[327] as does Dada, who in addition to his role at Adab and Girsu may be one of the Dadas operating at Gasur close to the royal family—perhaps even Dada, grandson of the king. The sukkal-maḫ, Bēlī-uršānu, is embedded in the Girsu network and is likely the same individual as that mentioned among those associated with Tūta-napšum's household at Ešnunna. If accepted as the same individual, this adds to the image of an incredibly mobile imperial administration that did not rely on agents stationed in one location, but preferred to maintain their own network of officials that superintended the top level of administration at major cities.

This idea accords well with the existence of inter-city centers in the south outside of Umma and Girsu, and the Semitic center at Adab; all these hubs are intrusive imperial elements that require a separate space during the Classical period. This space is emphasized by the potential rift between imperial and local agents. Furthermore, the level of mobility expressed by these high-ranking individuals at multiple city centers would require a transportation infrastructure, such as the imperial inter-city centers.

7.4.3. Regional Interaction

A final consideration is the geographic focus of the Akkadian Empire, specifically which regions experienced a high level of interaction or interference from the imperial center. This builds upon section 7.3.2, which assessed the transaction collocates for the city of Akkade. The

[327] Possibly the untitled Abba observed in the Ešnunna network.

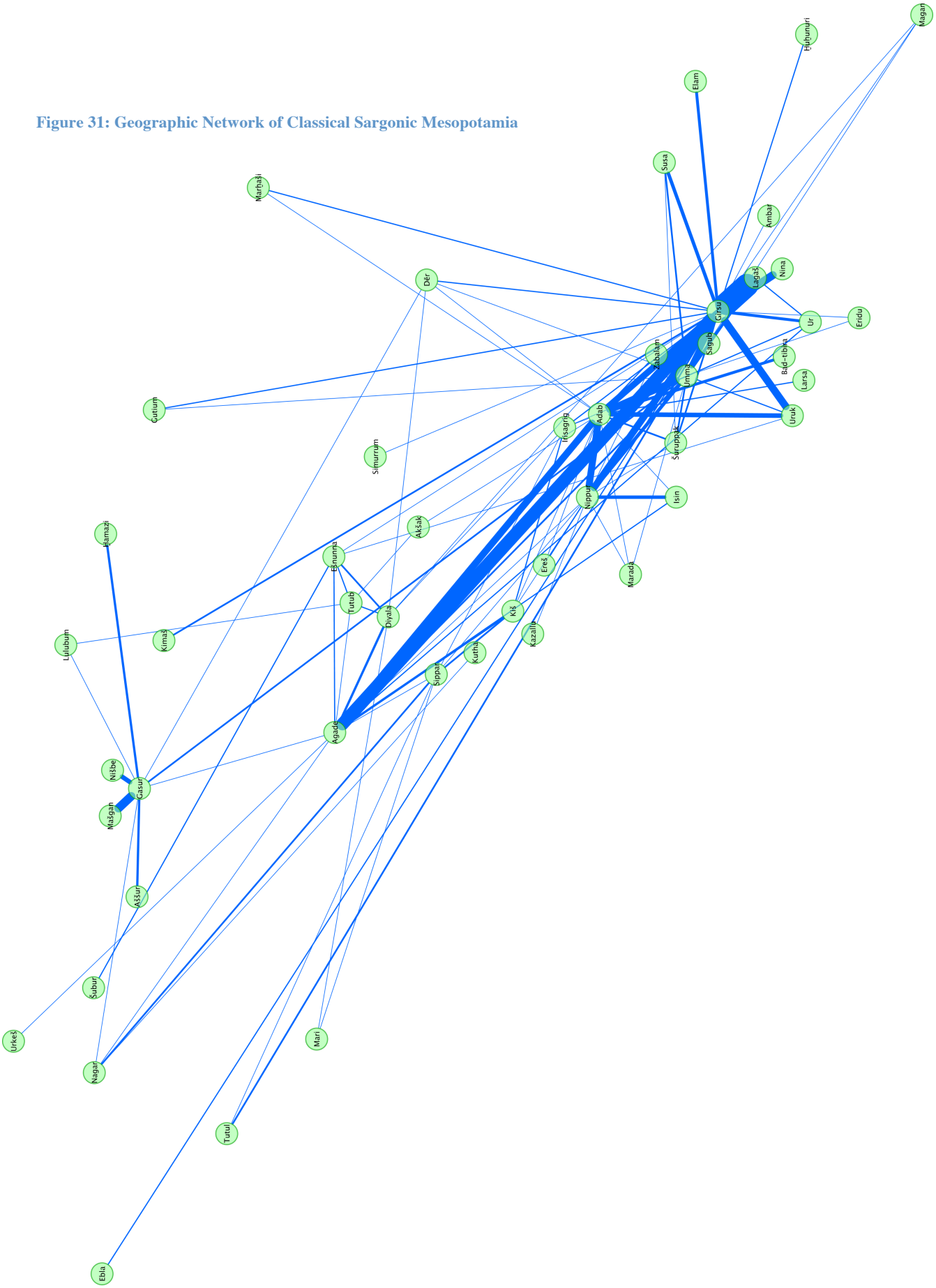
following network captures the number of references to shipments or transactions between different cities. The cities have been arranged in their general geographic position (not to scale) to highlight any connections with waterways, regional centers, etc. For locations that are not known, their location is, of course, approximated.

The unevenness in the preserved textual record certainly influences any reconstruction of such a network. However, the visual representation of administrative connections throughout Mesopotamia during the reign of the Classical kings demonstrates several strong correlations. The major centers of inter-city transaction are Akkade, Girsu, Adab, Nippur and Umma. The majority of movement is along the northwest-southeast axis, which follows the natural course of the Tigris and Euphrates rivers.[328]

The local exchange between Girsu and Lagaš is not unsurprising given the close association of the cities throughout their history and the frequent use of Lagaš to denote the larger geographical region. More striking is the strong relationship between Girsu and Akkade in the administrative records; it appears that Girsu made frequent shipments of goods or gubernatorial visits to Akkade compared to other southern cities. Surprisingly, the association between Akkade and its neighbor, Nippur, is largely mediated by the city of Adab, while Umma has relatively infrequent direct associations with Akkade. From the data, it is possible that certain southern cities such as Umma and Uruk shipped their goods to a supra-regional center, such as Girsu, Adab, Sagub or umm el-Ḥafriyat. Girsu would logically serve as the collection point for the cities of the far south, while Adab would better serve central locations. From such supra-regional centers various commodities were routed towards the imperial capital.

[328] Here, there cities are in coded in green and their connections are illustrated in blue.

Figure 31: Geographic Network of Classical Sargonic Mesopotamia



Granted, with the royal progresses throughout the Empire and the need for local infrastructure and maintenance, not all goods earmarked for the Akkadian Empire would be sent to Akkade. There was a persistent need for infrastructure and the management of local royal estates. The transactions of Šuruppak show an even distribution between its close neighbors, Adab and Umma, perhaps reflective of this network of local economic support. Umma itself is more isolated from Akkade than the other major centers of Girsu, Adab, Ur and Kiš, especially considering the comparative size of its corpus. This supports the observation that the king was also more disconnected from the local administration at Umma in section 7.4.1.6. Taken together, this begins to formulate a situation where Umma, more so than other Mesopotamian cities, remains in control and possession of its goods.

The northern cities (e.g. Isin, Sippar, Kiš, Ešnunna, Tutub, Akšak, etc.) appear to diverge from this paradigm, although each still maintains a connection to Akkade. One of the main bridges between the southern and northern cities is Irisagrig, more so than the expected cities of Kiš and Nippur. Neither Kiš nor Nippur appears to reach beyond the boundary of Sippar or interact with the Diyala region. From Sippar, however, networks to northeastern and northwestern cities open up.

The general north-south divide in Mesopotamia at this time may reflect the two general coalitions formed against Narām-Suen during the Great Rebellion. One was led by Ipḫur-Kiš from Kiš and the other by Amar-giri in Uruk. The northern league included the cities of Kazallu, Kutha, Sippar, Apiak and Giritab led by traitorous Kiš; the southern league was comprised of Girsu/Lagaš, Umma, Adab, Šuruppak, Isin, Nippur and Ur led by Uruk. There is, however, no indication in the records themselves that the battles that must have accompanied the Great

Rebellion were underway.[329] It is most likely that a long-standing cultural, ethnic, social, political or ideological divide between the northern and southern cities guided the coalition boundaries during the Great Rebellion, not *vice versa*.

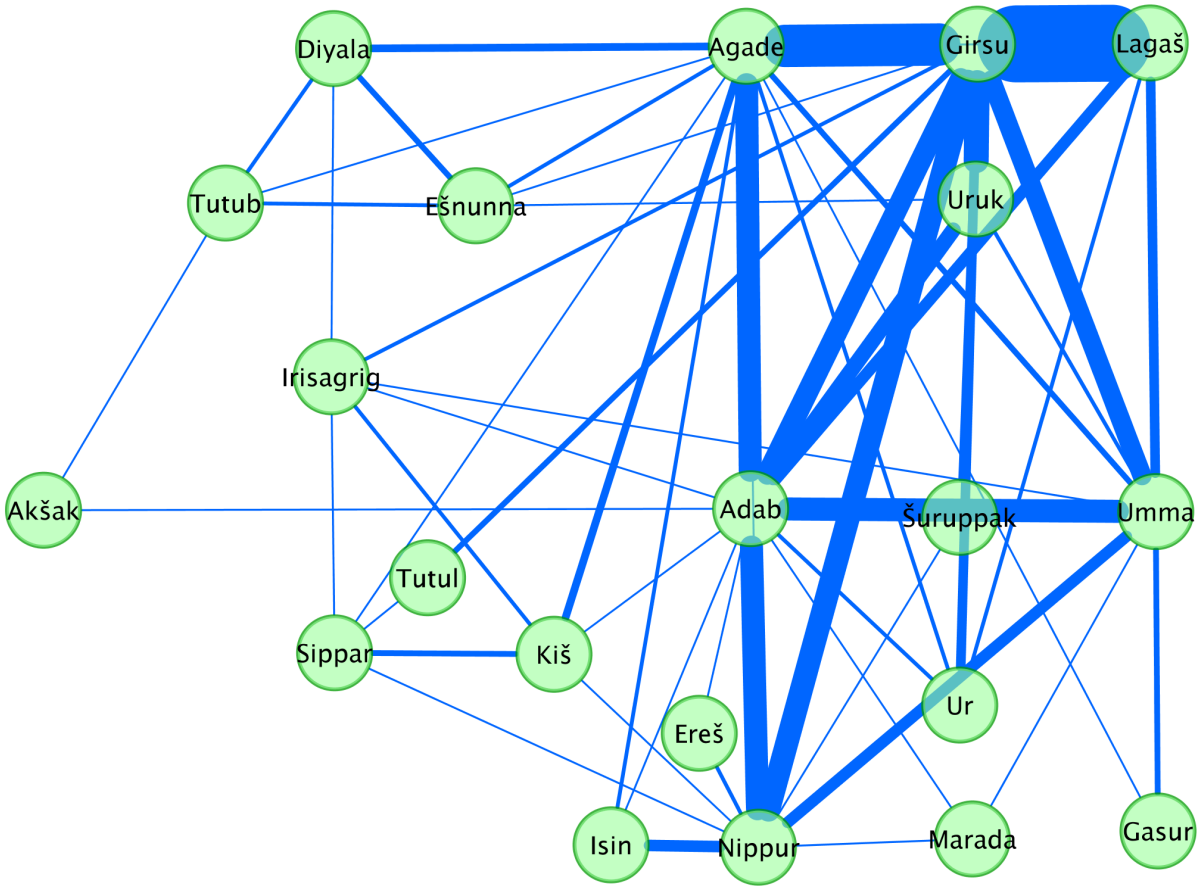


Figure 32: Detail Geographic Network[330]

The question remains, does Akkade re-orient the periphery towards the center to the detriment of periphery-periphery contact, as argued by A. J. Motyl as a part of his defining feature of empire? Or, does the need for a supra-regional infrastructure create new networks of interaction between peripheral cities in order to promote effectual transportation? Certainly the

[329] Whether or not this fracturing into north and south was occurring just prior to the Great Rebellion cannot be evaluated at present.
[330] The larger archives of the southern Mesopotamian cities certainly influence the visual impact of this network.

potential regional collection centers proposed here promote inter-city interaction. Even the new royal centers at Sagub and umm el-Ḥafriyat alter the dynamic within the region.

The SNA is only one measure of interaction within the Akkadian Empire; through archival analysis we now know that there was a royal presence at Nippur maintained at this time, which creates a stronger bond between that city and the imperial center than reflected here. The results of this approach are intended to supplement the more traditional historical and philological analysis, hopefully revealing new patterns in the data or supporting previous observations. I do not propose that SNA should supplant or replace Assyriological techniques, but can, and should, supplement them.

7.5. Chapter Summary

The broader perspective of this chapter has illuminated certain features of the imperial behavior of the Akkadian Empire. First, the political climate appears to have minimal influence on the treatment of individual cities. Despite the interminable revolts against the Akkadian king, the imperial policies and praxis remained relatively constant. The application of the imperial standard was universally applied to refined and elite goods, denoting the imperial interest in finished goods. The quotidian operations of the city's economy were left largely uninterrupted. However, the principles guiding the determination of which goods each city shipped to the capital are unknown.

The critical exception to this general pattern is Umma, where there was a notable reduction in the use of the imperial measure, anomalies in the land tenure system and a greater distance between the king and the local administration. This may have been due to various historical scenarios. The construction near Umma of Sagub, run by Mesaĝ, may have accelerated

pre-existing, latent tensions between the region and the Akkadian Empire. Or, the gradual implementation of Narām-Suen's Reforms may have ignited local resistance.

The second imperial feature detected in SNA is the mobility of the imperial agents. No longer relegated to discrete city-states, the Akkadian Empire was required to oversee diverse regions. And transportation was the crucial factor in allowing the Akkadian kings to maintain control over such disparate areas, especially in southern Sumer, further from their capital. These circumstances offer a potential explanation for the new inter-city centers: travel stations for the fleet of imperial agents moving between the Mesopotamian cities.[331]

Third, the chain of interaction between the king and the local governor has been roughly outlined. The šabra , acting on behalf of the king, often interfaced with the governor. However, the generals, temple personnel and sukkals also acted as intermediaries. Not surprisingly, the generals aligned with the royal network, but through their attachment to sukkals, connected the king's and governor's individual networks. Even at Umma this chain of intermediaries remained intact; however, the king was notably disconnected from them.

Finally, the interactions between the individual cities betray a clear north-south divide that likely preceded, and was merely maintained by, the Akkadian Empire. Despite Kiš and Nippur's northern affiliation, they were both oriented more towards the south. Sippar, further to the north, acted as the gateway between the north and south, as does Irisagrig. This central status of Irisagrig is certainly unexpected and warrants further investigation.

[331] The role of the inter-city centers as collection depots is not mutually exclusive with this function.

Chapter Eight

8.0. Conclusions

Šarru-kēn's ambition and vision reformed the Mesopotamian political landscape by effectuating an unprecedented level of uniformity in the administration. The survival and proliferation of this contested paradigm was due largely to his charismatic grandson, Narām-Suen, who further defied norms and tradition by deifying himself in his own lifetime. The personalities of the Akkadian Empire helped create a political circumstance that was emulated for millennia, spreading from the ancient Near East to Europe via the Mediterranean. Yet, despite the foundational position of the Akkadian Empire in the history of empires, discussions and analyses are generally lacking in imperiology.

The detailed examination of the Diyala administration explicated here offers a point of comparison for empire studies. The variation evidenced in the Diyala text material connotes a level of local autonomy against the overlaid imperial standards. In contrast with the uniform systems of dating, paleography and metrology are the inconsistencies in orthography and tablet layout as well as local bookkeeping practices.

At Tell Suleimah, the farthest removed from the Akkadian Empire geographically, there was a marked distribution between the metrology unit utilized for sales and that for loans. Similarly, at Ešnunna certain accounts rendered animal fodder in the imperial measure, while personnel received their rations in the smaller gur saĝ-ĝal$_2$. However, this pattern does not extend to many other Mesopotamian sites, suggesting that it was a retention of an earlier, local practice at Ešnunna that persisted under the Akkadian imperial administration. Finally, at Tutub a complementary distribution was observed between different transaction types; draught animals

were transferred in the administrative records using different terminology from the ovicaprids of the region. None of the patterns detected and articulated for these three sites in the peaceful Diyala region are discernable in other Mesopotamian cities. These consistent, yet distinct, particularisms in the administration of these cities demonstrate that the Akkadian kings either did not or could not penetrate into the local practices.

This reconstruction is supported by the collocation results that indicated the imperial administration was predominantly interested in finished and processed goods from the major centers of Adab, Girsu, Umma and Gasur. It appears that the logistics of production and management were left to the local administration. However, the goods rendered in the imperial standard do not agree well with the known strengths of each city's local economy.

The analysis of the types of transactions and their collocates revealed an incredibly mobile imperial administration with Akkadian agents and goods moving between the major cities. Local commidities that were being shipped away from their place of origin tended to be qualified as credited items. This implies that the accounts were ultimately held by the Akkadian kings.

The SNA of high-level administrators at Adab, Girsu, Umma, Gasur and Ešnunna support the previous observation that the imperial administration was incredibly mobile. The same individual is attested at multiple sites, with the marked exception of Umma. Coupled with the limited mention of the royal family at Umma, it appears that this city had a different relationship with the Akkadian kings. The SNA indicated that the king was more disconnected from the local institution than at any other site. However, it is unclear if this situation arose because of growing tensions with or genuine disinterest from the Akkadian Empire.

The other cities all demonstrate a similar pattern where the king is connected to the local administration via the figure of the majordomo. Morever, by comparing the networks from Adab, Girsu, Gasur and Ešnunna the following chain develops:

lugal ⇆ šabra ⇆ šagina ⇆ sukkal ⇆ sanga ⇆ ensi$_2$

This does not imply this infrastructure must be present at every site; certain figures may absent. However, the šabra always appears to act as the intermediary between the king and the city's governor, who has the strongest relationship with the local temples. Therefore, even though the royal family maintained a presence at most of these cities during the Classical period, their direct involvement with the local administration was generally limited. However, at Gasur the opposite appears to be the case, where it is the governor who has limited access to the key figures in the network.

The geography network also hints at the disconnection between the imperial center and the southern Mesopotamian city-states. Not surprisingly, Umma appears disconnected from Akkade, complementing impressions from the text-mining analysis and SNA. Both Sippar and Irisagrig act as the main bridges between the southern and northern cities. Sippar's role as a bridge is not surprising given its location; however, Irisagrig is an unexpected result that warrants further investigation.

Aside from the major bridges between the two major regions of Mesopotamia at this time are the hubs of Girsu and Adab that may have acted as supra-regional centers for the redistribution of goods throughout the imperial territory. Either to support or replace such centers, certain royal domains were established in the south at Sagub and umm el-Ḥafriyat. However, only limited material from these fascinating installations are currently available.

Hopefully, with the publication of additional material the purpose and context of such estates can be ascertained.

Overall, this initial attempt at imperial formation by the Akkadian kings focused on the acquisition of wealth and the minimization of unnecessary administration. As long as the conquered or acquired cities maintained shipments of finished goods to the Akkadian Empire, limited imperial involvement or interference was necessary. This policy was practiced throughout the entirety of their territory with no distinction being made between peaceful or rebellious areas.

The provenience test developed in this dissertation suggests that the unofficially excavated texts generically assigned to the Diyala based on onomastic, lexical and/or paleographic evidence are most similar to the administrative corpus from Kiš. However, this result must be considered in conjunction with the philological evidence; it is possible that "Diyala" texts capture a segment of the administration not present in the extant excavated materials from Ešnunna, Tutub or Tell Suleimah. This would skew the lexical profiles and consequently the calculations of the keyword analysis. The digital tool set and methodology developed in this dissertation are only a first step towards a more refined approach to assessing the likely origin of unprovenienced cuneiform texts.

Such a tool is increasingly necessary given the proliferation of unofficial excavations in Iraq and Syria in the recent decades. With controlled excavations becoming more irregular amidst the political turmoil of the region, scholards are confronted with a larger number of cuneiform texts thar lack detailed information on their place of origin. In response to this situtation, it is necessary for specialists to develop new tools in order to recover such information. Moreover, the methods described herein can be broadly applied to a variety of

ancient text corpora and may serve as a model for unofficially excavated materials from other ancient cultures.

8.1. Future Research

Even as I write this dissertation, new software for text mining and network analysis is becoming available and tailored to ancient historical sources. The technology will continue to improve as will our control over the ancient sources, and this progress will, hopefully, permit a constant re-evaluation of the tenets proposed here. One of the major lacunae to be addressed in future projects for text mining and network analysis is a complete digital capture of all the source material. Given the sheer volume of cuneiform texts, this will be a time consuming endeavor. However, parsing projects into circumscribed geographic or chronological parameters will increase both the number and diversity of studies that can be undertaken.

In Chapter One, A. J. Motyl's structural approach to classifying empire was described as a refreshing departure from the traditional definitions mired in subjectivity. The geographic networks explicated in Chapter Seven imply such a reorientation of the Mesopotamian cities during the Akkadian Empire, resulting in Motyl's "rimless wheel." However, without clear data from the preceding period, it is impossible to correlate this pattern solely to imperial influence. Hopefully, this avenue of research will be explored with the growing accessibility of such digital tool sets.

Given the unique status of Umma proffered here, a more detailed look at the Classical sources is a clear desideratum. However, to put these observations into context it may be necessary to expand the scope of inquiry to both earlier and later periods in order to assess if the Classical paradigm is abberant or normal. There is no ideological status associated with Umma

that might explain its singular behavior, unlike the status of Nippur or Akkade. Perhaps the reason is more practical, related to foreign military campaigns, diplomacy or kinship alliances.

One of the key components not available for comparison here is the constitution and operation of the inter-city centers built by the Classical Akkadian kings, and dubbed "royal domains." As royal domains, it is unlikely that these polities adhered to the same restrictions as southern Mesopotamian cities. The Empire had the ability to craft an entirely novel system in the royal domains, which would most likely resemble the policies of Akkade and/or the Akkadian culture. If, in essence, these creations are unfiltered expressions of the socio-economic structure of the Akkadian society, then they offer a unique window into an earlier phase of this cultural group.

A final comment on the research questions considered here: in order to gain a balanced view of the urban polities under the aegis of the Akkadian Empire, equally detailed studies on individual cities—oriented towards the question of empire—need to be completed. Fortunately, there is a current surge in the documentation and analysis of Sargonic Adab, which recommends it as an excellent data set. With the forthcoming Classical texts from Nippur by A. Westenholz, this principal city can shed further light on the policy and praxis of the Akkadian kings. With each new perspective garnered, a more complete representation of the complex and dynamic history of the Empire of Akkade emerges.

Appendix

1. Archaeological Findspot for MAD 1 Texts:

Publication No.	Findspot	Associated Structure	Excavation No.
MAD 1, 1	E 15 (robber hole)	Northern Palace Area	As. 31:T.1
MAD 1, 2-36	E 15 (robber hole)	Northern Palace Area	As. 31:T.1a
MAD 1, 37-40	E 15 (robber hole)	Northern Palace Area	As. 31:T.2-5
MAD 1, 41-48 (fragments)	E 15 (robber hole)	Northern Palace Area	As. 31:T.5a
MAD 1, 49 (tag)	E 15 (robber hole)	Northern Palace Area	As. 31:T.6
MAD 1, 50-84 (fragments)	E 15 (robber hole)	Northern Palace Area	As. 31:T.6a
MAD 1, 85			As. 31:T.9[332]
MAD 1, 86	E 15 (robber hole)	Northern Palace Area	As. 31:T.10
MAD 1, 87-109	E 15 (robber hole)	Northern Palace Area	As. 31:T.10a
MAD 1, 110	E 15 (robber hole)	Northern Palace Area	As. 31:T.11
MAD 1, 111	E 16 (robber hole)	Northern Palace Area	As. 31:T.12
MAD 1, 112-149 (fragments)	E 15 (robber hole)	Northern Palace Area	As. 31:T.12a
MAD 1, 150-154	E 15 (robber hole)	Northern Palace Area	As. 31:T.13-17
MAD 1, 155 (tag)	E 15 (robber hole)	Northern Palace Area	As. 31:T.18
MAD 1, 156 (fragments)	E 15 (robber hole)	Northern Palace Area	As. 31:T.19
MAD 1, 157-159	E 15 (robber hole)	Northern Palace Area	As. 31:T.20-22
MAD 1, 160 (fragment)	E 15 (robber hole)	Northern Palace Area	As. 31:T.22a
MAD 1, 161-162	E 15 (robber hole)	Northern Palace Area	As. 31:T.23-24
MAD 1, 163+165	E 15 (robber hole)	Northern Palace Area	As. 31:T.30+31
MAD 1, 164 (fragment)	E 15 (robber hole)	Northern Palace Area	As. 31:T.30a
MAD 1, 166	G 19:3	Private Houses IVa	As. 31:T.97
MAD 1, 167	G 20	Private Houses Va	As. 31:T.98
MAD 1, 168 (inscribed stone fragment)	G 19:5	Private Houses IVa?	As. 31:T.130
MAD 1, 169	H 18:7	Private Houses IVa	As. 31:T.716
MAD 1, 170	H 18:21 (or 12?)	Private Houses IVb	As. 31:T.723
MAD 1, 171	H 18:14	Private Houses IVb	As. 31:T.727
MAD 1, 172	H 18:14	Private Houses IVb	As. 31:T.729
MAD 1, 173	F 17:4	House above Northern Palace, Akkadian Level	As. 32:T.1
MAD 1, 174	J 18:1	Private Houses IVa or IVb	As. 32:T.2

[332] This excavation number is provided by Gelb in MAD 1, but is not found in OIP 88 with the find spots of all other texts from Tell Asmar.

MAD 1, 175	J 20 (Middle Road)	Private Houses IVa	As. 32:T.3
MAD 1, 176	K 19:7	Private Houses IVa or IVb?	As. 32:T.4
MAD 1, 177	J 19:47	Private Houses IVb	As. 32:T.5
MAD 1, 178	J 19:6	Private Houses IVa	As. 32:T.6
MAD 1, 179	J 19:29	Private Houses IVa	As. 32:T.7
MAD 1, 180	J 18:20	Private Houses IVb	As. 32:T.8
MAD 1, 181	J 19:44	Private Houses IVb	As. 32:T.9
MAD 1, 182	D 16:6	Northern Palace, Main Level	As. 32:T.10
MAD 1, 183	J 20:10	Private Houses IVa	As. 32:T.11
MAD 1, 184	H 18:27 (east of)	Private Houses IVb	As 32:T.13
MAD 1, 185	J 20:6	Private Houses IVa	As. 32:T.14
MAD 1, 186	K 21	Private Houses Va or IVb	As. 32:T.15
MAD 1, 187	J 21:26	Private Houses IVb	As. 33:T.1
MAD 1, 188	J 21:23	Private Houses IVb	As. 33:T.2
MAD 1, 189	J 21:23	Private Houses IVb	As. 33:T.3
MAD 1, 190	J 21:23	Private Houses IVb	As. 33:T.4
MAD 1, 191	J 28:4	Akkadian House	As. 33:T.14
MAD 1, 192-194	J 27:1	Akkadian House	As. 33:T.15-17
MAD 1, 195	D 15:3 (sounding)	Town Wall, ED levels	As. 34:178 (=34:T.10)
unpub. tablet	H 18:14? or H 19:6?	Private Houses IVb	As. 31:T.623 (=T662)
unpub. numerical tablet	J 19:48	Private Houses IVb	As 32:767
unpub. inscribed stone weight	G 18:2	Private Houses IVa	As. 31:669
unpub. tablet	G 19:2	Private Houses IVa	As. 31:T.138-139
unpub. tablet	G 19:5	Private Houses IVa	As. 31:T.211
unpub. inscribed stone weight	J 18:13	Private Houses IVa	As. 32:661
unpub. fragment	D 16:2	House above Northern Palace, Akkadian Level	As. 31:T.728
unpub. tablet	E 16:8	House above Northern Palace, Akkadian Level	As. 31:T.730
unpub. tablet	J 27:1	Akkadian House	As. 33:T.18
unpub. tablet with house plan	J 27:1	Akkadian House	As. 33:649

2. Titled individuals at Tutub

sagi	**^{ĝeš}gigir**	**^{ĝeš}e$_2$-gigir**	**^{ĝeš}guza**	**šu-i**	**lu$_2$-kin-gi$_4$-a**
ir$_3$-e-bum	ilum-dan	zu-zu*[333]	ša-at-be-il$_3$	i-tur$_2$-^{d}Suen	ip-ḫu-ru-um[334]
a-dam-u	a-ḫu-mu-pi$_5$	du-du	u$_2$-da-tum*	i$_3$-li$_2$-…	šu-i$_3$-li$_2$-šu[335]
ilum-ba-ni	i-tu-tu	u-ṣi-im[336]		šu-dur-ul$_3$	^{d}Suen-šar[337]
	u$_2$-da-tum*				zu-nim-ig-mu-um
	a-ḫu-ṭab$_6$				la-bi-bum
	zu-zu*				damiq-ilum[338]
nar	**azlag**	**simug**	**zadim**	**sa$_{12}$-du$_5$**	**dub-nagar**
^{d}Suen-ba-ni	ga-ga-a-lum	du-du	a-ti-e	da-da	mi-lu-lu
a-mur-ilum					
ašgab	**tug$_2$-du$_8$**	**nagar**	**sipa**	**engar**	**di-ku$_5$**
zu-zu	ar-ku-ku*	i$_3$-li$_2$-sa-lik	tab$_6$-si-ga	ig-su$_2$-zum	pu$_3$-^{d}Suen
i$_3$-li$_2$-sa-lik	e-mu-mu	ti-ru-um	e-na-^{d}Suen	al-i$_3$-li$_2$	mu-mu
LAGAB.AN		zi-bu-lum	^{d}Suen-e$_2$	ma-ma-la-…	u-bar-ru-um
pu$_3$-su-ṭab$_6$		AMA.TU.AN	^{d}Suen-mu-da	iltum	ba-lu-kum
		DINGIR.GU2	šu-i$_3$-li$_2$-šu	a-ḫu-ṭab$_6$	i$_3$-li$_2$-a-ḫi
		i-mi-ilum	i$_3$-lu-lu*	i$_3$-li$_2$-sa-lik	NE-e-e
			id-lul-ilum	id-lul-ZU	zu-zu
			a-ta$_2$-kal$_2$	šu-i$_3$-li$_2$-šu	qa$_2$-bi$_2$-^{d}Suen
				a-li-a-ḫu	
abba$_2$ iri^{ki}	**ga:eš$_8$**	**GAL.UN**	**pa-šeš**	**munu$_4$-sar**	**ad-kup$_4$**
zu-zu	bi$_2$-bi$_2$	tab$_6$-si-ga	e-na-^{d}Suen	puzur$_4$-ma-ma	iš-ma$_2$-^{d}Suen
				watrum	damiq-ilum
					puzur$_4$-zu
nu-banda$_3$	**ugula**	**maškim**			
^{d}Suen-e$_2$	pu$_3$-su$_2$-gi	i-tu-tu			
zu-zu	ba-ba-lum	^{d}Suen-ba-ni			
a-bi-e$_2$	ar-ku-ku*	i-mi-zu			
	i-tur$_2$-^{d}Suen	abba$_2$			
	za-am-ra-an	li-na-aš$_2$			
	i$_3$-li$_2$-iš-ma-ni	u$_2$-da-tum			

[333] Possibly the same individual in both Tutub 8 (^{ĝeš}e$_2$-gigir) and 60 (^{ĝeš}gigir) given the close association of their respective institutions.
[334] Appears in both Tutub 11 and 12.
[335] Mentioned in Tutub 8, 11 and 12
[336] Present in both Tutub 11 and 13.
[337] Mentioned in Tutub 8, 11 and 12.
[338] Appears in both Tutub 8 and 11.

	^{d}Dagān-alānīšu	ha-di$_3$-um
	i$_3$-lu-lu*	bala-su
	ilum-ba-ni	mar-ra-ut
	ga-ri$_2$-ilum	

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