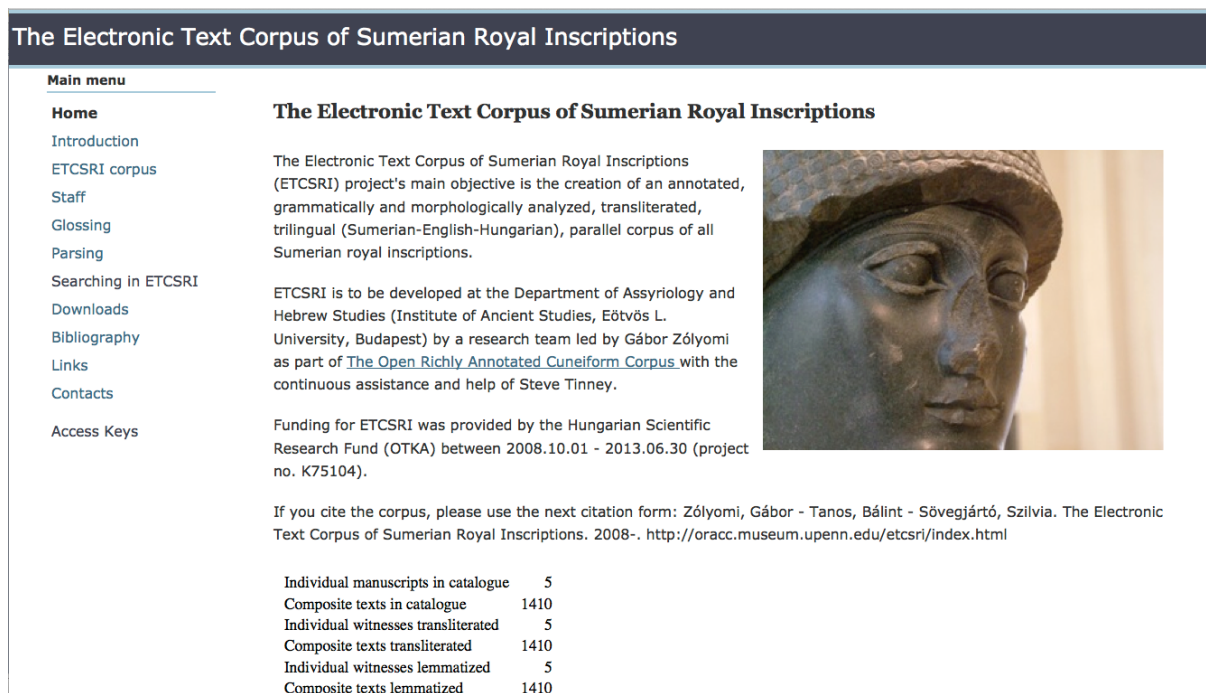


How to teach Sumerian to a website?¹

Gábor Zólyomi

If someone feels like studying Sumerian texts in these days, she or he may find scores of websites on the Internet, which, however, differ greatly in their reliability and standards. This lecture is about such a website, hopefully, one from among the more reliable ones. The subject of my talk is namely the Electronic Text Corpus of Sumerian Royal Inscriptions project, abbreviated as ETCRSI. The project started in October 2008. It has received funding from the Hungarian Scientific Research Fund for four years. ETCRSI has been developed as part of The Open Richly Annotated Cuneiform Corpus with the continuous assistance and help of Steve Tinney.



The Electronic Text Corpus of Sumerian Royal Inscriptions

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The Electronic Text Corpus of Sumerian Royal Inscriptions


The Electronic Text Corpus of Sumerian Royal Inscriptions (ETCSRI) project's main objective is the creation of an annotated, grammatically and morphologically analyzed, transliterated, trilingual (Sumerian-English-Hungarian), parallel corpus of all Sumerian royal inscriptions.

ETCSRI is to be developed at the Department of Assyriology and Hebrew Studies (Institute of Ancient Studies, Eötvös L. University, Budapest) by a research team led by Gábor Zólyomi as part of [The Open Richly Annotated Cuneiform Corpus](#) with the continuous assistance and help of Steve Tinney.

Funding for ETCRSI was provided by the Hungarian Scientific Research Fund (OTKA) between 2008.10.01 - 2013.06.30 (project no. K75104).

If you cite the corpus, please use the next citation form: Zólyomi, Gábor - Tanos, Bálint - Sövegjártó, Szilvia. The Electronic Text Corpus of Sumerian Royal Inscriptions. 2008-. <http://oracc.museum.upenn.edu/etscri/index.html>

Individual manuscripts in catalogue	5
Composite texts in catalogue	1410
Individual witnesses transliterated	5
Composite texts transliterated	1410
Individual witnesses lemmatized	5
Composite texts lemmatized	1410



Slide 1: The homepage of “The Electronic Text Corpus of Sumerian Royal Inscriptions” project’s website (<http://oracc.museum.upenn.edu/etscri/index.html>) (07.08.2014)

As regards the title of my talk, teaching Sumerian to a website is not intended to mean here that we teach the website to speak Sumerian. What is meant is the creation of an annotated, grammatically and morphologically analyzed corpus of all Sumerian royal inscriptions. The subject of my talk is to show you how this is done by ETCRSI. Before, however, presenting you the way ETCRSI works, I would like to discuss another question, which may have already occurred to some of you. The question is this: What is the use of teaching Sumerian to a website, in the sense as clarified above?

I have to start the answer with making clear our motivation to create ETCRSI. The primary objective of ETCRSI is not to make available a corpus of cuneiform texts on the web, but to provide a corpus of Sumerian texts, which may function as the basis of grammatical research. We wanted to create linguistic data that may function as the input of serious grammatical research. But what is exactly understood by linguistic data?

¹ Edited version of the talk given at the 57th Rencontre Assyriologique Internationale in Rome in 2011.

Christian Lehmann published a long study on the nature of linguistic data in 2004. Lehmann proposed a semiotic conception of data and defined it as “representations of properties of the object area of a science that serve certain purposes for their users.” There are two features of this definition that I consider relevant to the subject of my talk. First, data are representations that do not exist without us. The ultimate basis of dendrochronology, for example, is the cross sections of tree trunks. The real object of dendrochronology is, however, not the tree trunks but the numerical representations of the width of the annual rings on the trunk, their measurements. These data are produced by the researcher who distinguishes between the relevant and irrelevant aspects of the patterns on a tree trunk. Without the researcher the tree trunk is only a tree trunk, it is him who makes its patterns meaningful producing thereby data.

The other relevant feature of Lehmann’s definition is that data always serve the purposes of the discipline that uses them. If one is to do grammatical research on Sumerian, then she has to produce representations of the original speech event that serve this purpose. If I want to study verbal morphology, then I have to create a level of representation of the Sumerian texts on which the morphemes are represented, or there must be a representation from which I can derive this representation.

The next slide below shows the levels of representation of linguistic data, which according to Lehmann are needed for linguistic research. In the case of modern, living languages, the descriptive linguist may have the opportunity to make a record of the utterances that will serve as the basis of his research. Or he may use careful questionnaires designed to elicit those features of the language in which he is interested. In other words, the researcher of a living language has the opportunity to produce data that suits his research.

Table 4. Levels of representation of linguistic data

n°	level of representation	code and symbols of representation
1	segmental phonetic	IPA
2	prosodic phonetic	intonation curves, stress levels, etc.
3	lexical-phonological	morphophonemes, morpheme boundaries
4	orthographic	standard orthography
5	morphological	interlinear gloss with vocables of background language
6	grammatical	grammatical categories and relations
7	semantic	translations in various languages

Slide 2

It is obvious that one cannot influence the quality and characteristic of the primary linguistic representation in the case of an ancient language preserved only on written records. We have access to the Sumerian language only via the written texts. But the intended audience of the cuneiform representation of Sumerian was not the modern descriptive linguist but a contemporary audience, which was familiar with the language and the culture. This is a problem not unknown for assyriologists, the intended audience of the economic texts was the contemporary bureaucracy and not the historian of

economics, yet a history of the Mesopotamian economic system can be written only with the use of these texts.

From the point of view of a descriptive linguist, the Sumerian cuneiform texts suffer from major deficiencies as the only preserved representations of the language. Whereas the modern alphabetic writing systems represent the recorded language on the level of the phonetic form, the phonemes, the cuneiform writing system basically records it on the level of the meaning. The cuneiform writing used for Sumerian is based primarily on the use of logographic signs, which code the meaning of the words; the phonographic signs functioned only to indicate the word-form of the lemma recorded by a logographic sign. Only at the end of the 3rd millennium and the beginning of the 2nd millennium started the writing system to operate on the level of the phonetic form. But by this time Sumerian had become a second language also for the contemporaries, and probably this was the circumstance that resulted in this change.

By now, one may start to see the size of the challenge one faces when she would like to create a corpus of Sumerian texts suitable for linguistic research. It is like cooking spaghetti Bolognese without spaghetti. The levels of linguistic representation on the table by Lehmann are the increasingly more abstract representations of the original speech event. Increasing abstraction means selection and loss of information at the same time.

From the level of morphological representation (level no. 5), one may not reconstruct the level of phonemic segmentation (level no. 1), although it was level no. 1 that functioned as the basis for level no. 5. The starting point of the Assyriologist linguist is the scientific transliteration that corresponds to the orthographic level on Lehman's table (level no. 4). But already this level is the result of an intricate process of interpretation, which depends on such things as the received reconstruction of the Akkadian set of phonemes. The distance of this level from the original speech event indicates therefore substantial loss of information compared to a language recorded by tape or by an alphabetic writing system.

The correspondence between the cuneiform graphemes and the morphemes of the recorded word-forms is more complicated than in the case of the alphabetic writings, and this correspondence was continuously changing during the centuries. The cuneiform writing either do not represent certain morphemes or in different grammatical environments it represents them with different sequence of graphemes.

The three orthographic forms on the next slide are the writings of the same sequence of morphemes from different periods. The first form was used, for example, by the first two kings of first dynasty of Lagash, the third one was the most frequent one in the 3rd millennium, and the second one was the writing started to be used at the end of the 3rd millennium. A Sumerian text corpus that represents the text only in the scientific transliteration is thus inadequate for grammatical research as the cuneiform writing system fails to record a large part of the information that would be necessary for the reconstruction of the linguistic levels of representation on Lehmann's table.

(mu-ne-du₃); mu.nn.a.ni.n.du.ø (mu-na-du₃, mu-na-ni-du₃, mu-na-ni-in-du₃);
mu.nn.a.n.du.ø (mu-du₃ \dat, mu-na-an-du₃, mu-na-du₃); mu.nn.a.n.du.ø.'a.e (mu-na-
du₃-a-e); mu.nn.a.n.du.ø.'a.gin (mu-na-du₃-a-gin.); mu.nn.a.n.du.ø.'a.'a (mu-du₃ \dat\l1,
mu-na-du₃); mu.nn.a.n.du.ø (mu-na-du₃); mu.nn.a.n.du.ø.'a.la (mu-na-du₃ \dat\l1);
Slide 3: Writings of the Sumerian word /munnandu/ in different periods

There seems to be an unbridgeable gap between that original intention that produced the texts and the requirements of a linguistic description. The bridging of this

apparently unbridgeable gap between the representation of the cuneiform writing and the linguist is possible only if one creates an additional level of representation. This representation will reflect a probable model of Sumerian grammar, a theory of Sumerian grammar. It will be a theoretical construct, but, as I will show, a theory that can be immediately tested. Every student of Sumerian texts develops some kind of competence to assign a grammatical analysis to a word-form written in cuneiform. The shy sumerologist never makes these assignments explicit; one can only guess them on the basis of his translations. There exist braver sumerologists, they write articles or books on Sumerian grammar in which all or almost all examples are grammatically glossed. The bravest of all sumerologists, is however, he, who assigns grammatical analysis to each word-form of a relatively large text corpus.

This is exactly what ETCSRI endeavors to do when it assigns to all word-forms of the corpus of the Sumerian royal inscriptions a morphemic analysis (level no. 3 in Lehmann's table) and its glossed version (level no. 5 in Lehmann's table). This morphological analysis reflects the project's grammatical model of Sumerian, which in turn is a theoretical interpretation of the level of cuneiform representation.


Since ETCSRI is a digital corpus, every fault and inconsistency of this grammatical model may become obvious immediately. And it is the digital nature that makes an immediate correction possible. ETCSRI is therefore a "research tool" in the classical sense of the expression, as with its help one can test in an inductive way a grammatical model arrived at deductively using a relatively large corpus of Sumerian texts. So the answer to the question raised in beginning about the use of teaching Sumerian to a website is this: We teach Sumerian to it in order to learn better Sumerian from it.

In the second part of my talk I will describe the way ETCSRI is taught Sumerian. The starting point is always the cuneiform text, a text like the one the next slide, a unique Gudea inscription from the Schoyen collection published recently as CUSAS 17 15, which is labeled as Gudea 102 in ETCSRI.



Slide 4: ETCSRI Gudea 102 (= CUSAS 17 15) (<http://cdli.ucla.edu/dl/photo/P251600.jpg>)

The scientific transliteration of the cuneiform text occurs together with its English or Hungarian translation, as shown on the next slide.

Gudea 102	
<p>Names</p> <ul style="list-style-type: none"> • Gudea 102 <p>Numbers</p> <ul style="list-style-type: none"> • Q003229 • Sources table <p>View</p> <ul style="list-style-type: none"> • Catalogue entry • Proofing <p>Details</p> <ul style="list-style-type: none"> • Lagaš II • Royal Inscription 	<p>1 ^dnin-kar₂</p> <p>2 diŋir šuba₃ an-na</p> <p>3 lugal-a-ni</p> <p>4 gu₃-de₂-a</p> <p>5 ensi₂</p> <p>6 lagaš^{ki}-ke₄</p> <p>7 e₂ niŋin^{ki}-ka-ni</p> <p>8 mu-na-du₃</p>
<p>Sources</p> <p> RIME 3/1.01.07.add102, ex. 01</p>	<p>(¹) For Ninkar, the shining god on the sky, his master, Gudea, ruler of Lagaš, built his temple in Niĝin.</p>

Slide 5: The scientific transliteration of Gudea 102 with its English translation on ETCsRI's website (07.08.2014)

In the lower left corner of the page, there is a link to the record of the text on the homepage of the Cuneiform Digital Library Initiative project (<http://cdli.ucla.edu/P251600>). If this record also contains a photo or copy of the original, then one may look at it directly from the homepage of ETCsRI with a click.

The features of ETCsRI presented so far are available in almost all online cuneiform text corpora. The real novelty is under bonnet, which may be opened up, for example, with the button labeled as “Proofing” at the left side of the texts. This view of Gudea 102 shows that in ETCsRI every word form is represented on four levels of representation. The first line is the scientific transliteration, the second line contains the lemma to which the wordform is assigned, the third line is the morphemic representation, and the fourth line is the morphemic glossing.

Gudea 102

- 1 ^dnin-kar₂
Ninkar[1]DN
N1=Ninkar
N1=NAME
- 2 diŋir šuba₃ an-na
diŋir[deity] šuba[multicoloured] an[sky]\gen
N1=diŋir N1=šuba N1=an.N5=ak
N1=STEM N1=STEM N1=STEM.N5=GEN
- 3 lugal-a-ni
lugal[king]\dat
N1=lugal.N3=ani.N5=ra
N1=STEM.N3=3:SG:H:POSS.N5=DAT:H
- 4 gu₃-de₂-a
Gudea[1]RN
N1=Gudea
N1=NAME
- 5 ensi₂
ensik[ruler]
N1=ensik
N1=STEM
- 6 lagaš^{ki}-ke₄
Lagaš[1]SN
N1=Lagaš.N5=ak.N5=e
N1=NAME.N5=GEN.N5=ERG
- 7 e₂ niŋin₆^{?ki}-ka-ni
e[house] Niŋin[1]SN\abs
N1=e N1=Niŋin.N3=ani.N5=∅
N1=STEM N1=NAME.N3=3:SG:H:POSS.N5=ABS
- 8 mu-na-du₃
du[build]
V4=mu.V6=nn.V7=a.V11=n.V12=du.V14=∅
V4=VEN.V6=3:SG:H.V7=DAT.V11=3:SG:H:A.V12=STEM.V14=3:SG:P

Slide 6: The four levels of representation of Gudea 102 on ETCRSRI

The next slide shows the third line of Gudea 102 with the labels of the lines.

scientific transliteration	lugal-a-ni
morphemic representation	N1=lugal.N3=ani.N5=ra
morphemic gloss	N1=STEM.N3=3-SG-H-POSS.N5=DAT-H

Slide 7: The representations of the third line of Gudea 102

On the level of morphemic representation every morpheme is represented by a complex symbol that consists of a position tag followed by the morpheme itself after an equals sign. A position-tag gives the morpheme's position within the nominal, verbal, or non-finite verbal template, and has the form like N1, which means "the first slot of the nominal template. In the case of the word form on the slide, the first slot of the nominal template, N1, the head of NP, contains the stem **lugal**. The 3rd nominal slot, N3, contains the possessive pronominal enclitic =/**ani**/, and the 5th nominal slot contains the human dative case-marker =/**ra**/. The project's description of Sumerian grammar distinguishes 6 nominal and 16 verbal slots, the detailed description of the slots and their morphemes can be found on project's website. The significance of the position tags is that one may search not only morphemes with their help in the corpus but also sequence of morphemes and constructions.

The level of morphemic glossing identifies the morphemes of the previous level with the help of labels used in modern descriptive linguistics. These glosses make it possible that one may search for grammatical categories irrespective of the actual form of the morphemes. So one may find all plural verbs in the corpus with one click. At the same time, this level of representation makes the grammatical analysis of the corpus accessible to linguists who are not familiar the conventions of assyriology.

The four representations of all word-forms are stored in a single file, which is produced automatically from two sources every time the project is rebuilt. The first source is the transliteration produced following strict rules and conventions. The other source is the glossary. The glossary contains all word-forms of a given lemma together with their analysis. Word forms that have the same orthographic form but differ in their morphemic representations are distinguished by disambiguators in the lemmatized transliteration. In the slide 8 below, the disambiguator **dat** indicates that the wordform **lugal-a-ni** is in the human dative case. Note that no grapheme corresponds to the dative morpheme in this orthography, so it would be difficult to find all occurrences of the word-form **lugal-a-ni** in the dative case only on the bases of the cuneiform text.

Part of the lemmatized transliteration of Gudea 102

...
3. lugal-a-ni
#lem: lugal[king]\dat
...
¶

Part of the glossary entry for lugal “king”

¶
@entry lugal [king] N
@bases lugal
...
@form lugal-a-ni\dat /lugal #N1=lugal.N3=ani.N5=ra ##N1=STEM.N3=3-SG-H-POSS.N5=DAT-H
...
@sense N king
@sense N owner
@end entry

Slide 8: Line 3 of Gudea 102 in the lemmatized transliteration and the corresponding entry in the glossary file

The next slide shows a part of the entry of **lugal** in the latest version of the glossary as seen on the homepage of the ETCSRI.

lugal [KING] (N)

1909 instances

Base forms: lugal.**Written forms:** lugal; lugal-a-ni; lugal-a-ni-ir; lugal-ba; lugal-bi; lugal-e; lugal-e-ne;
lugal-ka; lugal-ka-ni; lugal-la-na-še₃; lugal-na-ke₄; lugal-na-ta; lugal-ne₂; lugal-ni;
lugal-ni-ir; lugal-ŋa₂-ka; lugal-ŋa₂-ta; lugal-ŋu₁₀.**Normalized forms:** lugal (lugal); lugal.ak (lugal-ka, lugal\gen); lugal.ak.ak.ø (lugal-ka\gen\gen\abs, lugal\gen\gen\abs); lugal.ak.ani.ø (lugal-ka-ni); lugal.ak.e (lugal\gen\erg); lugal.ak.ø (lugal\gen\abs); lugal.ani (lugal-ni); lugal.ani.ak.e (lugal-na-ke₄); lugal.ani.ak.še (lugal-la-na-še₃); lugal.ani.ak.ta (lugal-na-ta); lugal.ani.da (lugal-e\com, lugal-ni\com); lugal.ani.e (lugal-ne₂); lugal.ani.ra (lugal-a-ni-ir, lugal-a-ni, lugal-ni-ir, lugal-ni); lugal.ani.ø (lugal-a-ni, lugal-ni); lugal.bi.'a (lugal-ba); lugal.bi.ø (lugal-bi); lugal.bi.ø.am (lugal-bi); lugal.ence.ak.ø (lugal-e-ne); lugal.ŋu (lugal-ŋu₁₀); lugal.ŋu.ak.ta (lugal-ŋa₂-ta); lugal.ŋu.ak.'a (lugal-ŋa₂-ka); lugal.ŋu.e (lugal-ŋu₁₀\erg); lugal.ŋu.ra (lugal-ŋu₁₀); lugal.ŋu.ø (lugal-ŋu₁₀); lugal.ø (lugal\abs).**Morphological forms:**

N1=lugal (N1=STEM)

N1=lugal.N3=ani (N1=STEM.N3=3-SG-H-POSS)

N1=lugal.N3=ani.N5=ak.N5=e (N1=STEM.N3=3-SG-H-POSS.N5=GEN.N5=L3-NH)

N1=lugal.N3=ani.N5=ak.N5=ta (N1=STEM.N3=3-SG-H-POSS.N5=GEN.N5=ABL)

N1=lugal.N3=ani.N5=ak.N5=še (N1=STEM.N3=3-SG-H-POSS.N5=GEN.N5=TERM)

N1=lugal.N3=ani.N5=da (N1=STEM.N3=3-SG-H-POSS.N5=COM)

N1=lugal.N3=ani.N5=e (N1=STEM.N3=3-SG-H-POSS.N5=ERG)

N1=lugal.N3=ani.N5=ra (N1=STEM.N3=3-SG-H-POSS.N5=DAT-H)

N1=lugal.N3=ani.N5=ø (N1=STEM.N3=3-SG-H-POSS.N5=ABS)

Slide 9: A detail of the online glossary entry for the word **lugal** “king” (07.08.2014)

The online glossary entry contains all word-forms of the lemma on all levels of representation. If one clicks on a word-form, morphemic representation, or morphemic gloss, all its occurrences in the corpus will be listed. This also works the other way round, clicking on any word-form in any text results in getting to the glossary entry of the lemma in a pop-up window. Furthermore, if one puts the cursor over a word form in a text, then the morphemic representation and the meaning of the word-form occurs in a small square. The morphemic representation pointed at with a red arrow on slide 9 is the morphemic representation of the 3rd line in Gudea 102. The transliterated word-forms in brackets behind the morphemic representation show that four orthographies correspond to this sequence of morphemes in the present state of the corpus. If one clicks on the morphemic representation, she gets all the occurrences listed, and she can see that the orthographic forms in which the /r/ phoneme of the dative case is also present graphemically occur only during the reign of the last two kings of the 3rd dynasty of Ur.

The next slide shows a table produced as one my first works for the late Jeremy Black, when I was a visiting student in Oxford. It collects all grammatical forms of the divine name Enlil in the presargonic corpus. It took me almost a week to collect and analyze all relevant places.

Table I:
Occurrences of ^den-líl in Presargonic Royal Inscriptions

<u>Rulers</u>	<u>Genitive</u>	<u>Dative</u>	<u>Gen. + Dat.</u>	<u>Gen. + Erg.</u>	<u>Gen. + Gen.</u>	<u>Gen. + Abl.</u>
Eanatum	^d en-líl-la ¹ ^d en-líl ⁶	^d en-líl-la ²	^d en-líl-ra ³	^d en-líl-ke ₄ ⁴	^d en-líl-ka ⁵	---
Enanatum I	^d en-líl-la ⁷	---	^d en-líl-ra ⁸	---	---	---
Enmetena	^d en-líl-la ⁹ ^d en-líl ¹⁴	^d en-líl-la ¹⁰	^d en-líl-ra ¹¹ ^d en-líl-la-ra ¹⁵ ^d en-líl ¹⁶	^d en-líl-la-ke ₄ ¹²	---	^d en-líl-la-ta ¹³
Enanatum II	---	---	^d en-líl-ra ¹⁷	---	---	---
Uru'inimgina	---	^d en-líl-la ¹⁸	^d en-líl-la-ra ¹⁹	^d en-líl-la-ke ₄ ²⁰	---	---
Lugalkignedudu	---	^d en-líl-la ²¹ ^d en-líl-ra ²²	---	---	---	---
Enšakušana	---	^d en-líl-la ²³	---	---	---	---

1) Ean. 1, IV 5; 1, XVI 15; 1, XVII 17; 2) Ean. 62, V 8; 3) Ean. 1, XXII 10; 60, I 2; 69, I 3; 4) Ean. 2, I 6; 3, I 11; 4, I 11; 6, IV 6; 7, III 7; 11, I 6; 22, I 5; 64, 5'; 5) Ean. 1, XX 3; 6) Ean. 1, rev. V 46; 7) En. I, 29, I 7; 33, I 5; 8) En.I, 18, 2; 9) Ent. 28, II 14; 28, V 23; 29, II 31; 29, IV 35; 29, VI 4; 10) Ent. 1, III 5; 1, III 13; 1, IV 9; 8, VI 4; 23, 2; 23, 21; 11) Ent. 8, I 1; Ent. 16, I 2; 17, 2; 34, 2; 36-40, I 2; 41, I 2; 42, I 2; 43, I 2; 12) Ent. 28, I 23; 29, I 23; 13) Ent. 28, V 6; 29, V 29; 14) Ent. 32, I 6; 35, I 7; 15) Ent. 22, 2; Ent. 9-14, I 1; 16) Ent. 35, I 2; 17) En.II, 1, 2; 18) Ukg. 1, III 1'; Ukg. 10, III 7; 11, 34; 19) Ukg. 1, I 2; 4-5, I 2; 10, I 2; 11, 2; 20) Ukg. 4, VII 30; 5, VII 13; 21) Lukin. 1, I; 22) Lukin. 5, 1; 23) Enšak. 2, 1; 1, 6';

Slide 10: The occurrences of the divine name Enlil in the presargonic royal inscriptions

This table, a week's work, could now be done with a couple of clicks in ETCSRI using the glossary entry Enlil shown on the next slide below. Of course to get to these clicks will have been a work of four years.

Enlil [1] (DN)

328 instances

Base forms: ^den-lil₂; ^den-lil_x(E₂).**Written forms:** ^den-lil₂; ^den-lil₂-da; ^den-lil₂-e; ^den-lil₂-ka; ^den-lil₂-ka-ke₄; ^den-lil₂-ke₄; ^den-lil₂-la; ^den-lil₂-la₂; ^den-lil₂-la₂-ka; ^den-lil₂-la₂-kam; ^den-lil₂-la₂-ke₄; ^den-lil₂-la₂-ra; ^den-lil₂-la₂-ta; ^den-lil₂-la₂-še₃; ^den-lil₂-le; ^den-lil₂-ra; ^den-lil₂-ra₂; ^den-lil_x(E₂); ^den-lil_x(E₂)-ka; ^den-lil_x(E₂)-ke₄; ^den-lil_x(E₂)-la; ^den-lil_x(E₂)-la₂; ^den-lil_x(E₂)-la₂-ra; ^den-lil_x(E₂)-le; ^den-lil_x(E₂)-ra.**Normalized forms:** Enlil (^den-lil₂, ^den-lil_x(E₂)); Enlil.ak (^den-lil₂-la₂, ^den-lil₂\gen, ^den-lil_x(E₂)-la₂\gen, ^den-lil_x(E₂)); Enlil.ak.ak (^den-lil₂-ka, ^den-lil₂-la₂-ka, ^den-lil₂-la₂\gen\gen, ^den-lil_x(E₂)-ka); Enlil.ak.ak.e (^den-lil₂-ka-ke₄); Enlil.ak.ak.ra (^den-lil₂-la₂\gen\gen\dat); Enlil.ak.ak.ø (^den-lil₂-la₂-ka\abs, ^den-lil₂-la₂\gen\gen\abs, ^den-lil₂\gen\gen\abs); Enlil.ak.e (^den-lil₂-ke₄, ^den-lil₂-la₂-ke₄, ^den-lil₂\gen\erg, ^den-lil_x(E₂)-ke₄); Enlil.ak.ra (^den-lil₂-la₂-ra, ^den-lil₂-la₂-ra, ^den-lil₂-ra, ^den-lil_x(E₂)-la₂-ra, ^den-lil_x(E₂)-ra); Enlil.ak.še (^den-lil₂-la₂-še₃); Enlil.ak.ta (^den-lil₂-la₂-ta); Enlil.ak.'a (^den-lil₂-ka); Enlil.ak.ø (^den-lil₂-la₂-ka\gen\abs, ^den-lil₂-la₂\abs, ^den-lil₂\gen\abs, ^den-lil_x(E₂)-la₂, ^den-lil_x(E₂)); Enlil.ak.ø.am (^den-lil₂-la₂-kam); Enlil.da (^den-lil₂-da); Enlil.e (^den-lil₂-e, ^den-lil₂-le, ^den-lil_x(E₂)-le); Enlil.ra (^den-lil₂-la, ^den-lil₂-ra, ^den-lil₂-ra, ^den-lil₂-ra₂, ^den-lil₂\dat, ^den-lil_x(E₂)-la, ^den-lil_x(E₂)-la₂, ^den-lil_x(E₂)-ra); Enlil.ø (^den-lil₂\abs).**Morphological forms:**

N1=Enlil (N1=NAME)

N1=Enlil.N5=ak (N1=NAME.N5=GEN)

N1=Enlil.N5=ak.N5='a (N1=NAME.N5=GEN.N5=L1)

N1=Enlil.N5=ak.N5=ak (N1=NAME.N5=GEN.N5=GEN)

N1=Enlil.N5=ak.N5=ak.N5=e (N1=NAME.N5=GEN.N5=GEN.N5=ERG)

N1=Enlil.N5=ak.N5=ak.N5=ra (N1=NAME.N5=GEN.N5=GEN.N5=DAT-H)

N1=Enlil.N5=ak.N5=ak.N5=ø (N1=NAME.N5=GEN.N5=GEN.N5=ABS)

N1=Enlil.N5=ak.N5=e (N1=NAME.N5=GEN.N5=ERG)

N1=Enlil.N5=ak.N5=ra (N1=NAME.N5=GEN.N5=DAT-H);

Slide 11: A detail of the online glossary entry for the divine name Enlil on ETCSRI (07.08.2014)

ReferencesLehmann, Christian (2004), 'Data in Linguistics', *Linguistic Review* 21, 275–310.