

iClassifier



ISRAEL
SCIENCE
FOUNDATION



האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM



This research is done in the framework of:

ARCHAEO MIND LAB

The Archaeology of the mind

Team

Prof. Orly Goldwasser

Dr. Dmitry Nikolaev

Halely Harel (PhD Candidate)

+*iClassifier* contributors from
universities

all around the world

#cognitivearchaeology

#classifierstudies



האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM



הקרן הלאומית למדע
المؤسسة الإسرائيلية للعلوم
Israel Science Foundation



iClassifier

Welcome to *iClassifier*

In the last year we have developed at The Hebrew University,
a new project

iClassifier

A digital platform for classifier analysis

Our team:



Prof. Orly Goldwasser



Halely Harel



Dr. Dmitry Nikolaev

The *iClassfier* prototype was developed for Egyptian Hieroglyphs as a sample corpus.

ARCHAEO MIND LAB

The Archaeology of the mind



iClassifier

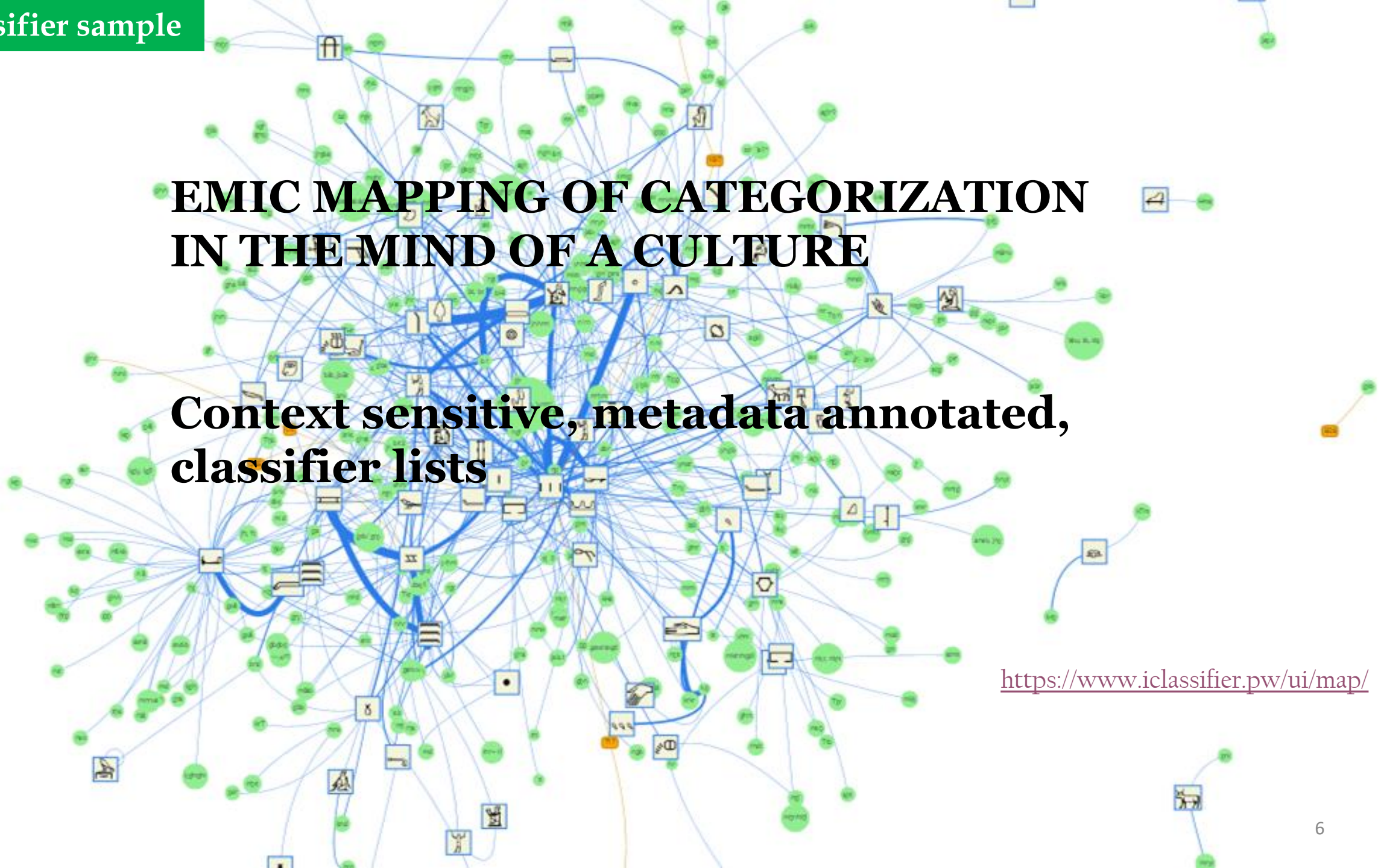
<https://www.iclassifier.pw/>

**A NEW DIGITAL TOOL FOR THE ANALYSIS OF
CLASSIFIER SCRIPTS AND LANGUAGES**

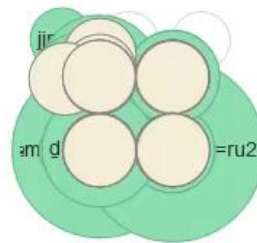
Monday July 1st- Thursday July 4th, 2019 –
The Hebrew University of Jerusalem

EMIC MAPPING OF CATEGORIZATION IN THE MIND OF A CULTURE

Context sensitive, metadata annotated,
classifier lists



<https://www.iclassifier.pw/ui/map/>



A digital interactive mapping of classifier categories

- Each classifier appears inside a square.
- All lemmata that serve as hosts for a classifier appear in green circles.
- Lemmata are linked with orange lines to a classifier.
- Classifiers that co-occur – multiple classification appear with a grey line.

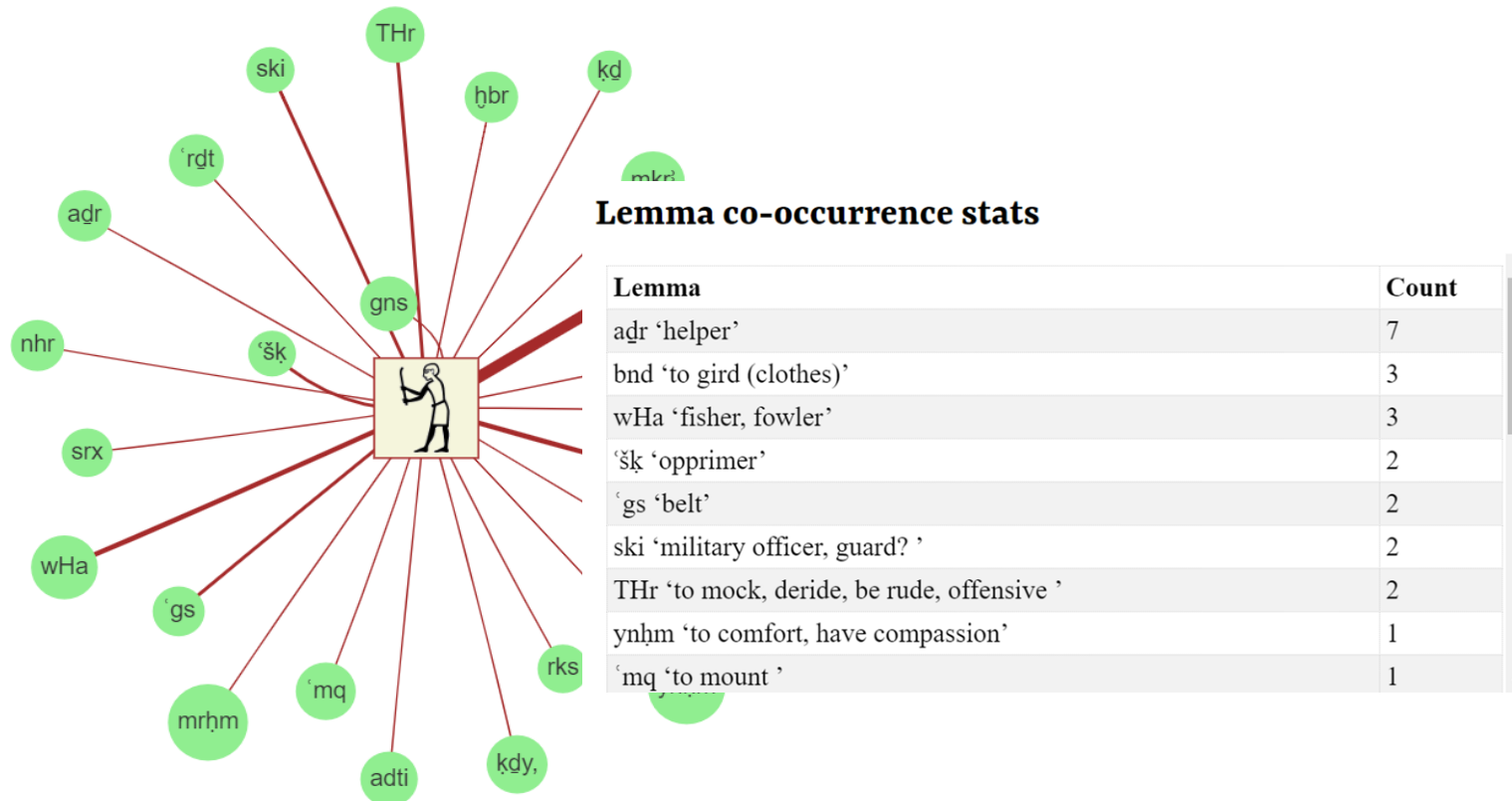
In Egyptian a host may appear with more than one classifier.

- Width of lines represents the number of attestation in our corpus.
If the line is thicker, there are more occurrences.

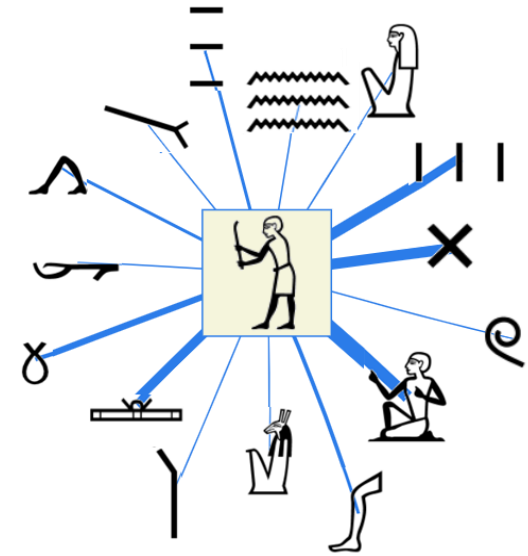
Corpus based classifier lists

Allowing to Identify patterns:

- Collocations
- Inverse correlation
- Multiple classification- hierarchy and sequence
- Category structure



Often, in ancient Egyptian multiple classification for A single host



iClassifier sample

Choose a classifier:

A1

A2

A4

A5

A7

A17

A21

A24

A28

A30

A32

A40

A52

A55

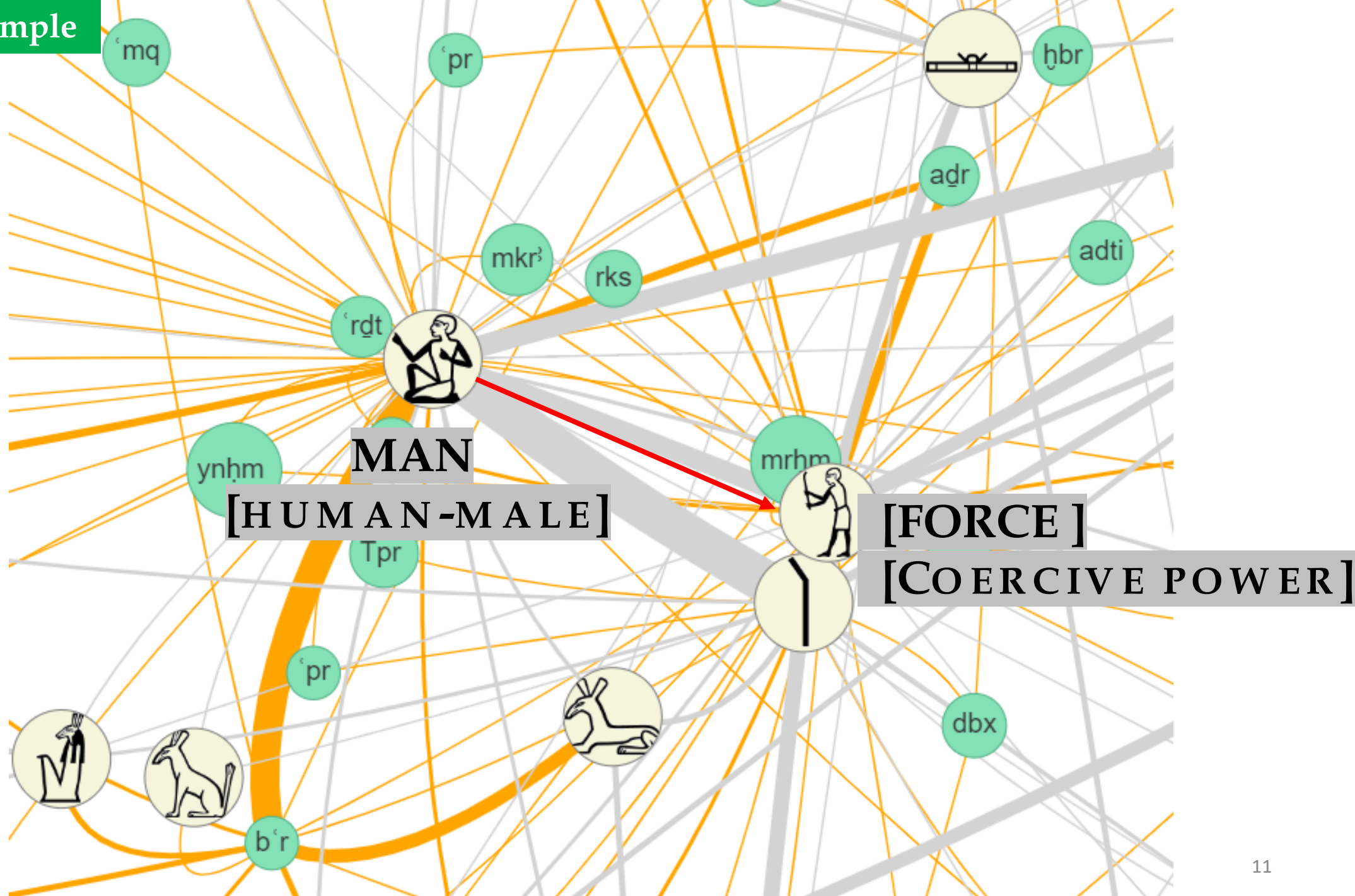
Aa2

B1

bH

C7

C7A



LEMMA

A published dictionary entry
(Preferably a digital dictionary
TLA, Ramses etc.)

TOKEN

An analysis of a certain example
Only obligatory part is Manuel-de-
Codage and classifier marking,
All other levels of analysis are
not mandatory



WITNESS

- * Detailed metadata by THOT thesauri.
- * Images of source inscription

CLASSIFIER ANALYSIS

- *Classifier sequence
automatic tagging of sequence e.g. 1/1 or 3/5.
- *Classifier combination
- *Level of classification
- *Type of relation between classifier
meaning and host word.

Polis, S., and V. Razanajao. 2016. "Ancient Egyptian Texts in Context. Towards a conceptual data model (The THOT Data Model—TDM)." *Bulletin of the Institute of Classical Studies* 59/2: 24-41.

iClassifier input forms

Inserting LEMMA

Lemma editor

Select lemma

<<< Show previous Show next >>>

Transliteration: [*]	Source: [*] Hoch 1994
šrm	Select source
Meaning: [*]	Pages: [*]
to lay down (arms), seek	407

Transliteration:	Source: TLA
Srm	Select source
Meaning:	Pages:
to lay down arms; to seek p	156790

[Remove variant](#)

+ Add variant

Lemmas

Compounds

Tokens

Witnesses

Supertexts

Bibliography

'Classifying the Other': input forms

Lemma editor

<<< Show previous Show next >>>

Transliteration: [*]	Source: [*] Hoch 1994
šrm	Select source
Meaning: [*]	Pages: [*]
to lay down (arms), seek	407

Transliteration:	Source: TLA
Srm	Select source
Meaning:	Pages:
to lay down arms; to seek p	156790

[+ Add variant](#) [Remove variant](#)

Root:	Lexical field:
šrm	Social and politica
Secondary lexical field:	
Demotic:	Demotic meaning:
Demotic lexicon entry:	Pages:
Select source	
Coptic:	Coptic meaning:
Coptic lexicon entry:	Pages:
Select source	
Source root:	Source meaning:

Cognates:

Language	Cognate
Ugaritic	šrm
Meaning	
'to be healthy', D-stem 'to re	
Source:	Pages, nos.
Select source	
Discussion	
	Remove cognate

Language	Cognate
Akkadian	šrm
Meaning	
'to be well'	
Source: Hoch 1994	Pages, nos.
Select source	
Discussion	
	Remove cognate

Cognates:

Language	Cognate
Akkadian	šrm
Meaning	
'to be well'	
Source: Hoch 1994	Pages, nos.
Select source	
Discussion	
	Remove cognate

Language	Cognate
Phoenician	šrm
Meaning	
šrm D-stem 'to recompense'	
Source: Hoch 1994	Pages, nos.
Select source	
Discussion	
	Remove cognate

Language	Cognate
Old Aramaic, Imp Aram., T	šrm
Meaning	
D-stem 'to recompense'	
Source: Hoch 1994	Pages, nos.
Select source	
Discussion	
	Remove cognate

Language	Cognate
Old South Arabian	šrm
Meaning	
'to sue for peace'	
Source: Hoch 1994	Pages, nos.
Select source	
Discussion	
	Remove cognate

Language	Cognate
Akkadian	šrm
Meaning	
'to be unharmed' D-stem 'to	
Source: Hoch 1994	Pages, nos.
Select source	
Discussion	
	Remove cognate

[Add cognate](#)

Contact type:	Certainty level:
cultural?	1 2 3
Number of occurrences in Hoch:	
15	
Comments:	
15 include nouns and verbs	
Remove borrowing info	

[Add borrowing info](#)

[Add bibliographical reference](#)

Comments:

[Save lemma and clear form](#) [Save lemma and continue editing](#)

Inserting TOKEN

And Marking classifiers

Classifying Other

Lemmas

Compounds

Tokens

Witnesses

Supertxts

Bibliography

Token editor

Select a token for a full description or in order to modify it.

Select token

<<< Show previous Show next >>>

Lemmas: Lemma: frm 'to lay down The token is a part of a compound: (arms), seek peace, greet, do homage' ☐ Yes ☒ No

Change lemma

Supertext: not set

Choose supertext

Witness: oTurin 9588/57365

Change witness

Add token picture (a witness must be selected)

Picture title:

Picture ID: 13

Show picture in context

Comments:

Delete picture

MDC:

SA-A-Z4:r-Z1-m-a-A30-Y1

Get hieroglyphs

Phonetic reconstruction:

Classification status:

* Classified

☐ Not classified

☐ Not preserved

Token meaning:

ask for peace

Part of speech:

Verb

Register/texteme:

MDC with markup:

SA-A-Z4:r-Z1-m-a-A30-~

Copy MDC Refresh classifiers

Transliteration:

Sign comments:

Context:

www.h.r.p.d.wat.fr/m-a-30-w

Classifiers:

Show Delete

Add classifier picture (a token picture must be selected)

Gardiner number: A30

Classifier type:

Classifier level:

* Lexical

☐ Pragmatic

☐ Derivational

☐ Metatextual

☐ Phonetic (incl. false etymology)

Semantic relation:

Agent

Classifier comments:

Classifier type: p.c.t

Show Delete

Add classifier picture (a token picture must be selected)

Gardiner number: Y1

Classifier type:

Classifier level:

* Lexical

☐ Pragmatic

☐ Derivational

☐ Metatextual

☐ Phonetic (incl. false etymology)

Semantic relation:

Classifier comments:

Classifier type: residual

Add bibliographical reference

Comments:

o. Turin 57365, http://www.bham.ac.uk/Museum/GetWebRef.c?c=1&id=1&id2=1&id3=1&id4=1&id5=1&id6=1&id7=1&id8=1&id9=1&id10=1&id11=1&id12=1&id13=1&id14=1&id15=1&id16=1&id17=1&id18=1&id19=1&id20=1&id21=1&id22=1&id23=1&id24=1&id25=1&id26=1&id27=1&id28=1&id29=1&id30=1&id31=1&id32=1&id33=1&id34=1&id35=1&id36=1&id37=1&id38=1&id39=1&id40=1&id41=1&id42=1&id43=1&id44=1&id45=1&id46=1&id47=1&id48=1&id49=1&id50=1&id51=1&id52=1&id53=1&id54=1&id55=1&id56=1&id57=1&id58=1&id59=1&id60=1&id61=1&id62=1&id63=1&id64=1&id65=1&id66=1&id67=1&id68=1&id69=1&id70=1&id71=1&id72=1&id73=1&id74=1&id75=1&id76=1&id77=1&id78=1&id79=1&id80=1&id81=1&id82=1&id83=1&id84=1&id85=1&id86=1&id87=1&id88=1&id89=1&id90=1&id91=1&id92=1&id93=1&id94=1&id95=1&id96=1&id97=1&id98=1&id99=1&id100=1

Modify entry Delete entry

MARKING CLASSIFIERS

MDC:

SA-A-Z4:r-Z1-m:a-A30-Y1

Get hieroglyphs

MDC with markup:

SA-A-Z4:r-Z1-m:a-~A30~--

Copy MDC

Refresh classifiers

By marking a classifier
with tilde ~CL~

You start your corpus based
classifier list

Analyzing classifiers

[illegible][illegible]





Add classifier picture
 (a token picture must be selected)

Gardiner number: Y1

Classifier type:

Taxonomic ▼

Taxonomic

Taxonomic – repeater
 Taxonomic – metaphoric
 Schematic
 Unclear

Classifier level:

☒ Lexical
 ☐ Pragmatic
 ☐ Derivational
 ☐ Metatextual
 ☐ Phonetic (incl. false etymology)

Semantic relation:

--- ▼

Classifier comments:

Classifier type: residual

Comments:

o. Turin 57365,
[http://aaew.bbaw.de/tla/servlet/GetWcnRefs?
f=0&l=0&of=0&ll=156790&db=0&lr=0&mo=1&w
t=y&bc=Start](http://aaew.bbaw.de/tla/servlet/GetWcnRefs?f=0&l=0&of=0&ll=156790&db=0&lr=0&mo=1&wt=y&bc=Start)

iClassifier input forms

annotating context/cotext, glossing

Marking POS-‘Part Of Speech’

Part of speech:

--- ▼

- Noun
- Verb
- Preposition
- Function word
- Divine name
- Toponym
- Proper name
- Adjective
- Not set

Register/texteme:

Local reference

bw ‘šḳꜥi’

‘I have not oppressed’

(Medinet Habu 108,4=KRIV76,6, Ramesses III)

‘..I have not robbed another of his place’ //

Delete entry



{bw}{neg}{‘šḳꜥi’}{oppress.PFV=1sg}

Developing a thesaurus for glossing

{pr}{house}, {ix-ix} {cl.woman-woman}

Also - linking to a full version of a witness (text)
(Ramses, TLA), when available.

**+adding classifier glosses automatically
for Egyptian**

How do we digitize classification?



***Marking each classifier in context.**



Analysing the **relation** between each host token and its classifier(s)= **classifier analysis**.

Creating schmatization scheme.

Classifier analysis

Analysing the **relation** between each host token and its classifier(s)= **classifier analysis**.

✎ Classifier *type*

✎ Classifier *level*

✎ Semantic roles

Classifier *type*

Defining the relations between a host word and its classifier, following Roschian linguistic categorization/prototype theory. (applied to Egyptian in Goldwasser 2002).

Extension relationship

Taxonomic relations

Taxonomic (superordinate, generic, basic-level)

Metaphoric

Repeater

Unique

CL- NOUN
ANIMAL (CL)- cat

MONKEY (CL)-anger
CAT (CL)- cat

Intention relationship

Schematic relations

Meronymic (part-of) (superordinate)

Metonymic (superordinate)

SCRIBAL-PALETTE (CL)- scr
CROWN (CL)- royalty

Semantic roles

Classifiers:





ShowDelete

Add classifier picture
(a token picture must be selected)

Gardiner number: A30

Classifier type:
Taxonomic

Classifier level:
☒ Lexical
☐ Pragmatic
☐ Derivational
☐ Metatextual
☐ Phonetic (incl. false etymology)

Semantic relation:
Agent

Agent
Experiences
Patient
Instrument
Source
Goal
Location
Mover
Zero
Causee
Absenthee
Other
Delete

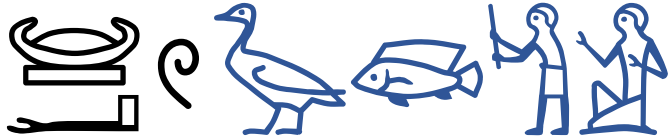


wh^r.w

Noun

Fowler **CL**^[HUMAN-MALE]

‘Fowler’ (catcher of birds and fish)

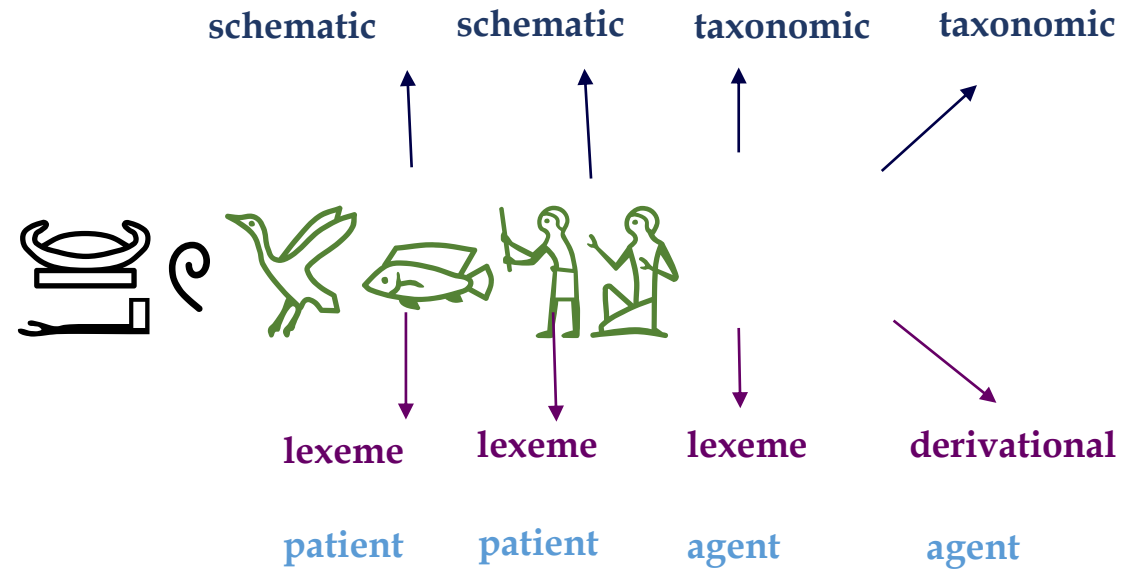


wh^c.w

Noun

Fowler **CL**^[BIRD] **CL**^[FISH] **CL**^[FORCE] **CL**^[HUMAN-MALE]

‘Fowler’ (catcher of birds and fish)

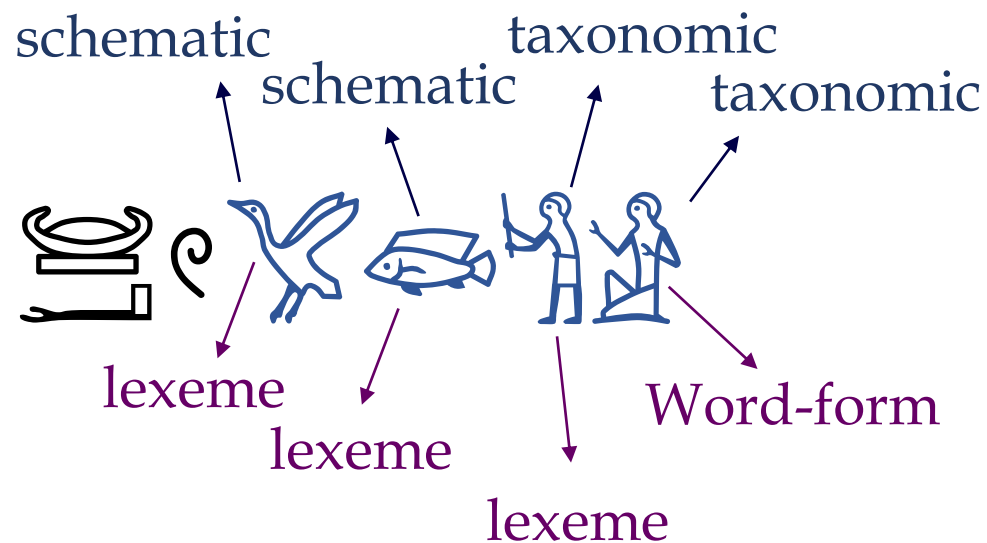


wh^ɕ.w

Fowler CL[BIRD] CL[FISH] CL[FORCE] CL[HUMAN-MALE]

‘Fowler’ (catcher of birds and fish)

Schematic-taxonomic order hypothesis



Classifier type

Classifier level

wh^ɹ.w

Noun

Fowler CL[BIRD] CL[FISH] CL[FORCE] CL[HUMAN-MALE]

‘Fowler’ (catcher of birds and fish)

Schematic-taxonomic order hypothesis

Classifier analysis



Add classifier picture
(a token picture must be selected)

Gardiner number: A24

Classifier type:

t

Classifier level:

☒ 1 ☐ 2 ☐ 3

☐ 4 ☐ 5

Semantic relation:

agent

False etymology:

☒ No ☐ Yes

Classifier comments:

Sample token entry

-Marking semantic relations – verb, root
! Studying root classification
additinal observations- default, resildual

Tokens
Witnesses
Supertests
Bibliography

Select token
<<< Show previous Show next >>>

Lemma: Lemma: wHa 'fisher, fowler'
Change lemma
Supertext: not set
Choose supertext
Witness: pAnastasi IV
Change witness
Add token picture (a witness must be selected)
MDC: wHa-27-G41-K1-A24-A1
Get hieroglyphs
Phonetic reconstruction:
Classification status:
* Classified
* Not classified
* Token not preserved
Context meaning:
bird catcher
Part of speech:
Noun

The token is a part of a compound:
☐ Yes * No
Coordinates in the supertext:
Coordinates in the witness:
MDC with markup:
wHa-27-G41-K1-A24-A1
Copy MDC Refresh classifiers
Transliteration:
Sign comments:
end of line followed by dot
Context:
[A1] wHa
Register/texteme:

Classifiers:

Add classifier picture (a token picture must be selected)
Gardiner number: G41
Classifier type:
s
Semantic relation:
object patient
Classifier comments:

Classifier level:
* 1 ☐ 2 ☐ 3
* 4 ☐ 5 ☐ 6
False etymology:
* No ☐ Yes

Add classifier picture (a token picture must be selected)
Gardiner number: K1
Classifier type:
s
Semantic relation:
object patient
Classifier comments:

Classifier level:
* 1 ☐ 2 ☐ 3
* 4 ☐ 5 ☐ 6
False etymology:
* No ☐ Yes

Add classifier picture (a token picture must be selected)
Gardiner number: A24
Classifier type:
t
Semantic relation:
agent
Classifier comments:

Classifier level:
* 1 ☐ 2 ☐ 3
* 4 ☐ 5 ☐ 6
False etymology:
* No ☐ Yes

Add classifier picture (a token picture must be selected)
Gardiner number: A1
Classifier type:
t
Semantic relation:
agent
Classifier comments:

Classifier level:
* 1 ☐ 2 ☐ 3
* 4 ☐ 5 ☐ 6
False etymology:
* No ☐ Yes

Add bibliographical reference
Comments:
Modify entry Delete entry

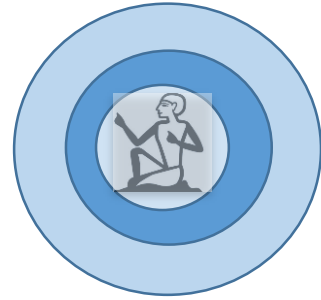
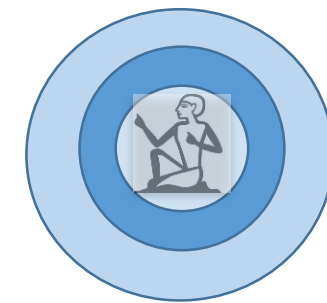
iClassifier

Search by classifier

search and study of
variations according to context-
e.g. Script, Materiality, Genre
metadata

A1 in
11th dynasty

A1 in
a certain text



specific “**synchronic cuts**”

General

category structure

possible host-words list
with quantitative analysis
of category structure

center/
periphery

multiple classification

location in multiple classification
Inverse correlation
co-occurrence (statistics)

Synchrony
Diachrony



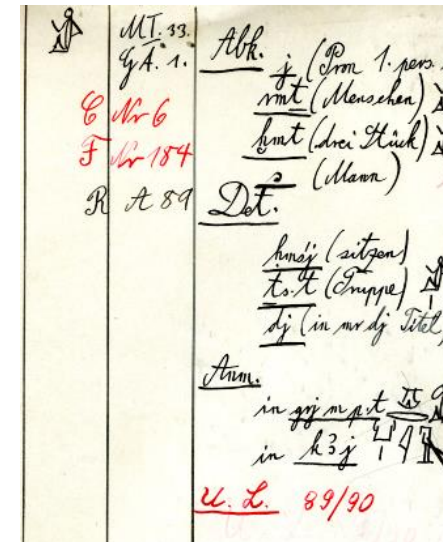
composite classifiers



compound classifiers

diachronic overview
The history of A1 as classifier

Possible search of sign
‘as classifier’ and
‘as phonogram/logogram’



Zeichenliste des Wörterbuches
der ägyptischen Sprache

according to context-

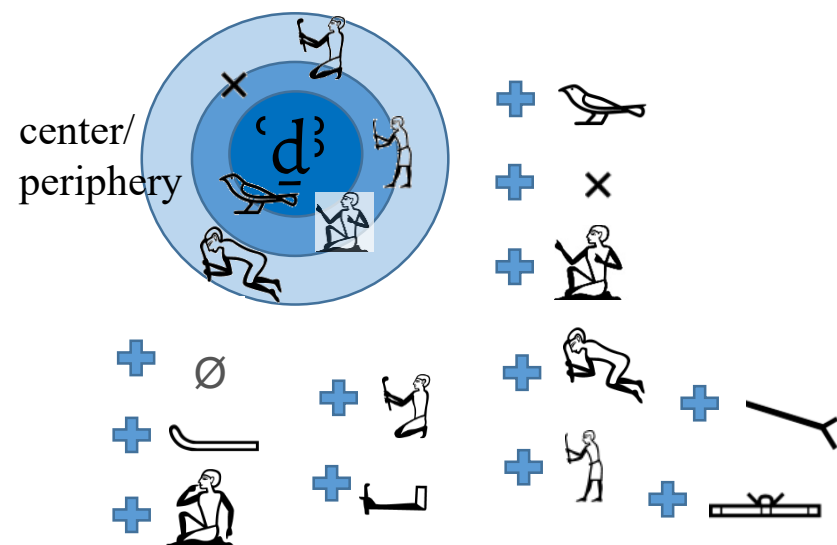
Search by materiality:

hieratic, lapidary (royal/non-royal),
by genres: juridical texts, stories, prayers etc.
metadata

general

“with whom” ‘d’ “coupable” appears?

lemma's common classifiers, combination
knowledge structure around the lexeme,
classifier priority, ranking



'd

search by **root**
see together
classification of
'd' as substantive,
adjective and verb

specific “synchronic cuts”

e.g. The lemma 'd' in 14th cen. BCE.

Ramses Online an annotated corpus of Late Egyptian

[About](#) [Contact](#) [Lexicon](#) [Searches](#) [Help](#) [Beta Version](#)

 ^cd3 *ADJ* faux

Bibliography

Spellings

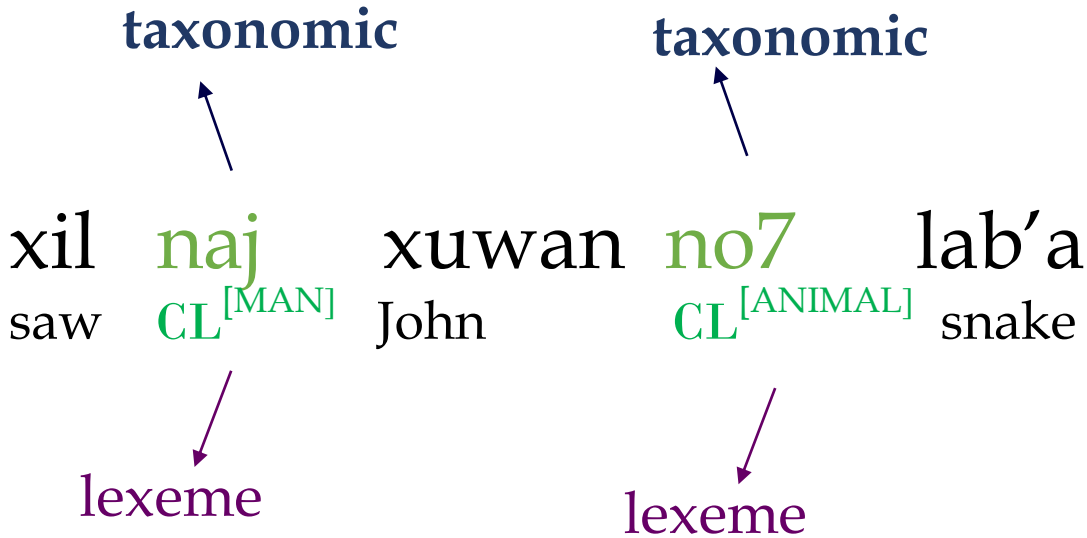
diachronic overview

The history of the lemma's classification and spelling

Jakaltek (Mayan)

Classifier type

Classifier level

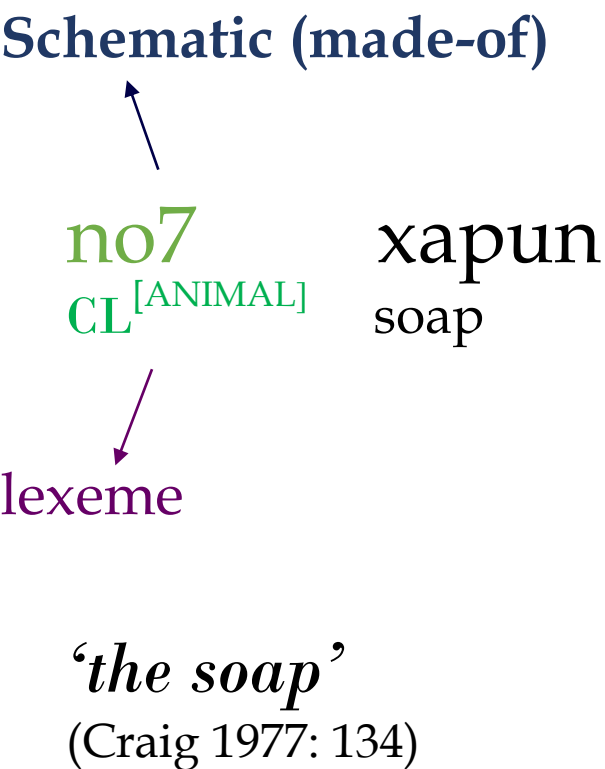
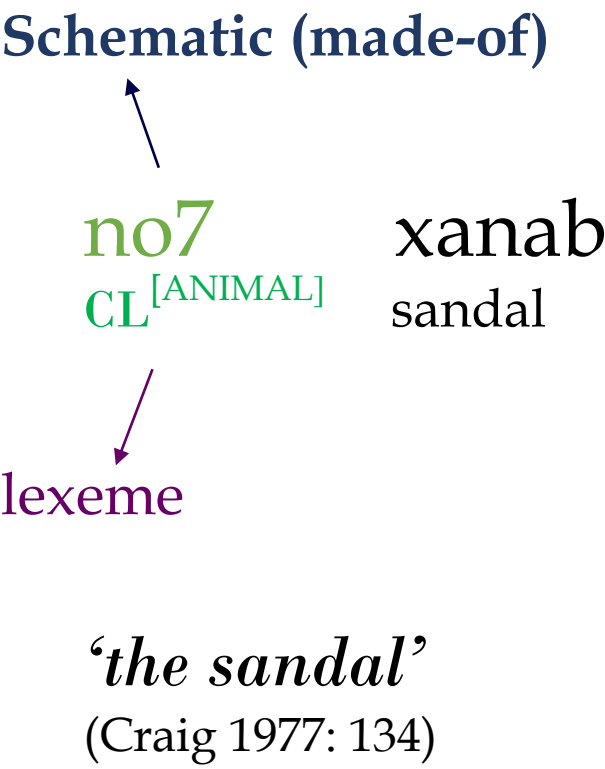


‘John saw a snake’
(Craig 1986: 264)

Jakaltek (Mayan)

Classifier type

Classifier level



how do we collect metadata?

Lemmas
Compounds
Tokens
Witnesses
Supertexts
Bibliography

Edit witnesses

Select witness

Witness name: Nauri decree

Select supertext The chosen supertext:

Choose the script

The chosen script: Hieroglyphs

Choose the object type

The chosen object type: Wall

Choose the text type

The chosen text type: Royal
decree/warrant

Select TopBib volume:

Choose the location

TopBib ID of the chosen
location: [701-060-190](#)

Choose the period (from)

Choose the period (to)

The chosen endpoints: Sethos I
Menmaatre; Sethos I
Menmaatre

Choose the date (from)

Choose the date (to)

The chosen endpoints: not set;
not set

URL: <http://ramses.ulg.ac.be/text/legacy/1071?page=35&pageLe>

Publication: Griffiths Nauri Decree

Select source

Pages:

193-208

Comments:

Remove reference

Add bibliographical reference

Picture title:

Picture ID: 10



Show full picture

Show delete button

Comments:

Add picture

Comments:

[http://aaew.bbaw.de/tla/servlet/GetTextDetails?
u=guest&f=0&l=0&tc=20619&db=0](http://aaew.bbaw.de/tla/servlet/GetTextDetails?u=guest&f=0&l=0&tc=20619&db=0)

Modify witness

Delete witness

Witness=
Text

For Ancient Egyptian
using THOT data
model

For other languages
open/closed
Thesauri

***Location**
Preferably map
Coordinates.

***date**

***genre**

***informer**

The chosen script: Hieroglyphs The chosen object type: Wall

Choose the text type: Select TopBib volume:

The chosen text type: decree/warrant

Choose the period:

Choose the period:

The chosen endpoint: Menmaatre; Sethos Menmaatre

URL:

Publication: Griffiths

Select source:

Pages:

Comments:

Administrative text

Biographical text

Dream interpretation

Expedition text

Funerary text

Geographical text

Legal text

Letter

Literary text

Magical text

Mythological text

Name/filiation/title

Non-royal historical text

Onomasticon

Petition

Royal text

Scientific text

Song

Choose the location:

TopBib ID of the chosen object: [701-060-190](#)

Choose the date (from):

Choose the date (to):

Chosen endpoints: not set;

et

page=35&pageLe

Royal text

Royal annals

Royal

Choosing
metadata
values
using THOT
Thesauri and TOPBIB,
implemented into
iClassifier.



**Referencing existing
Editions of texts online
At TLA, Ramses and
other digital publications.**

Adding media, linking examples with images

- 👉 Marking a token in a witness photo
- 👉 Marking classifier/s of each token



New classifier !
D464

Adding
Images
Videos
Audio recordings



**Adding written observations, images and references to a
'classifier' page.**

A discussion around a classifier category -



Adding to each classifier page source hieratic versions of a sign.

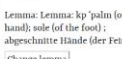
Lemmas
Compounds
Tokens
Witnesses
Supertexts
Bibliography

Token editor

Select a token for a full description or in order to modify it.

Select token

<<< Show previous Show next >>>

Lemmas: Lemmas: kp 'palm (of the hand); sole (of the foot); abgeschnittene Hände (der Feinde)' The token is a part of a compound: ☒ Yes ☐ No

Change lemma

Supertext: not set

Choose supertext

Witness: pTuri 1984

Change witness

Add token picture (a witness must be selected)

Picture ID: 16




Show picture in context

Comments:

Delete picture

MDC: MDC with markup:

Get hieroglyphs: Copy MDC: Refresh classifiers:

Phonetic reconstruction: Transliteration:

Classification status: ☒ Classified ☐ Not classified ☐ Token not preserved

Context meaning:

Sign comments:

Part of speech:

Register/textene:

Syntactic relation:

Classifier comments:

Classifiers:




Add classifier picture (a token picture must be selected)

Gardiner number: D46D

Classifier type:

Classifier level:

Semantic relation:

False etymology:

Classifier comments:




Add classifier picture (a token picture must be selected)

Gardiner number: F31

Classifier type:

Classifier level:

Semantic relation:

False etymology:

Classifier comments:




Add classifier picture (a token picture must be selected)

Gardiner number: F100

Classifier type:

Classifier level:

Semantic relation:

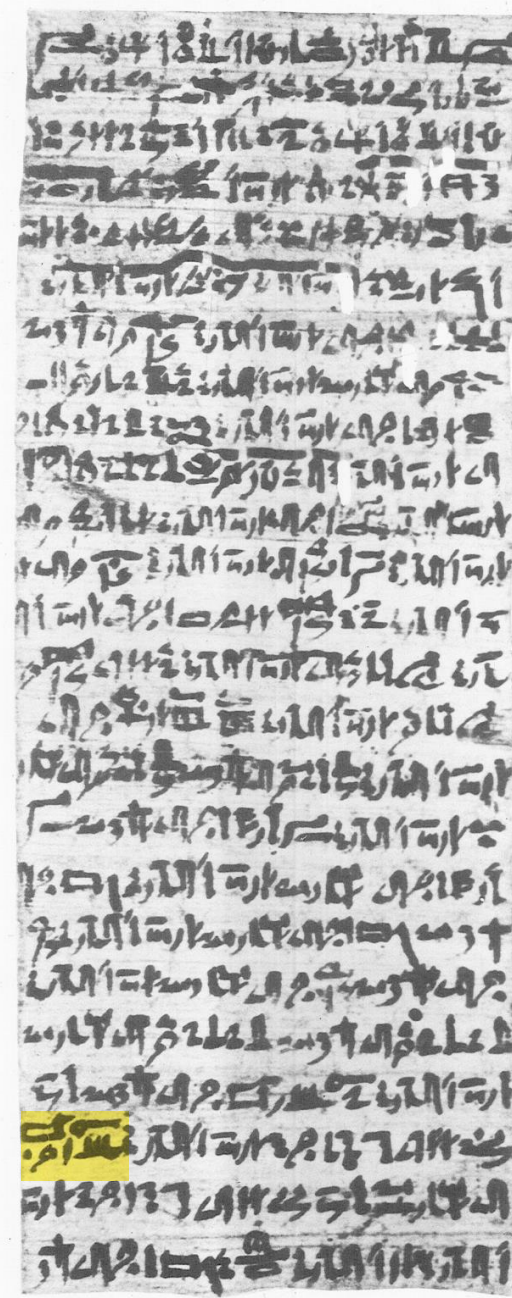
False etymology:

Classifier comments:

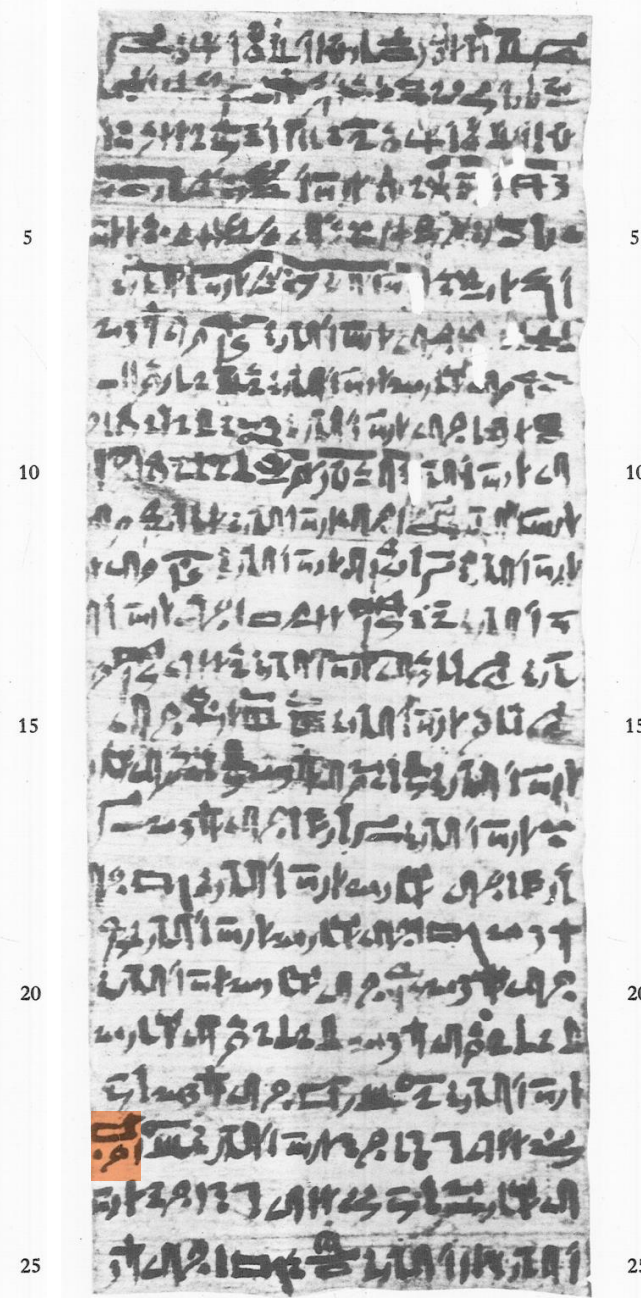
Add bibliographical reference

Comments:

Modify entry Delete entry



PAPYRUS T. 2, VS. 1-25



PAPYRUS T. 2, VS. 1-25

iClassifier project reports

Classifier
reports

Lemma reports

Classifier map

Choose a lemma (only lemmata that have at least one token associated with them are shown):

kp 'palm (of the hand); sole (of the foot) ; abges

Tokens for lemma **kp** 'palm (of the hand); sole (of the foot) ; abgeschnitte Hände (der Feinde) ':

- k:p-D46D-F51:Ff1 (D46D, F51, Ff1)
- k:A-p-Ff1-D46D-F51:Ff8A (D46D, F51, Ff8A)
- k{{0,5,100}}**p{{382,453,100}}**Ff1{{1013,471,70}}*D46D{{1284,0,60}}**F51{{1442,606,78}}**Ff100{{1938,673,35}} (D46D, F51, Ff100)
- k:p-Z7-D46D:F51 (D46D, F51)
- k:p-Z7-D46D:F51:Ff8A (D46D, F51, Ff8A)
- k:p-D266:Z2 (D266, Z2)
- k:p-Z7-D46D:F51 (D46D, F51)
- k:p:t-F51-F51-F51 (F51-F51-F51)
- k:p:t-F51-F51-F51 (F51-F51-F51)
- k:p:t-F51-F51-F51 (F51-F51-F51)
- k:p-D46D:Z2 (D46D, Z2)
- k:p-D46D:Z2 (D46D, Z2)
- k:p-D46D:Z2 (D46D, Z2)
- ()
- k:p-F51-F51-F51:Z2 (F51-F51-F51, Z2)
- k:p-Z7-F51-F51-F51 (F51-F51-F51)
- k:p-Z7:Z7-Z2 (Z2)
- k:p-D46D-F51:Ff1 (D46D, F51, Ff1)
- k:p-D266:Z2 ()

Classifier statistics for lemma **kp** 'palm (of the hand); sole (of the foot) ; abgeschnitte Hände (der Feinde) ':

- D46D (10)
- F51 (7)
- Z2 (6)
- F51-F51-F51 (5)
- Ff1 (2)
- Ff8A (2)
- Ff100 (1)
- D266 (1)

Lemma stats.

Where it appears on a map?

Diachrony of classification?

Goal-

All data points are linked
for navigating
around

Reaching out – marking of semantic fields

WOLD, CONCEPTICON.

- Assigning semantic fields as comparative concepts to link classifier categories across the world languages.

Concepticon Home Concepts **Concept sets** Concept lists Compilers Sources

Concept sets

Showing 1 to 100 of 3,338 entries

ID	Name	Definition	Semantic field	Ontologic category
0	<NA>	Set of all concepts not yet mapped to a meaningful concept set	--any--	--any--
1	CONTEMPTIBLE	Deserving of contempt or scorn.	--any--	--any--
2	DUST	Any kind of solid material divided in particles of very small size.	Agriculture and vegetation	
3	BRAVE	Having or characterized by courage.	Animals	
4	COURTYARD	An area wholly or partly surrounded by walls or buildings.	Basic actions and technology	
5	GAZELLE	An antelope of the genus Gazella mostly native to Africa and capable of running at high speeds for long periods.	Clothing and grooming	
6	EARTHQUAKE	The violent shaking of the ground produced by deep seismic waves, originating from the epicentre.	Cognition	
7	GATHER	To collect or gather (e.g. work, magazines, etc.).	Emotions and values	
8	CURSE	To imprecate evil or misfortune upon someone or something, usually by means of a prayer or implication.	Food and drink	

Home Vocabularies **Meanings** Languages Authors

Meanings: Semantic field The physical world

Showing 1 to 75 of 75 entries (filtered from 86 total entries)

LWT code	Meaning	Core list	Semantic category	Borrowed score	Age score	Simplicity score	Representation
1.1	the world	True	Noun	0.40	0.84	0.86	48
1.21	the land	True	Noun	0.27	0.90	0.94	50
1.212	the soil	True	Noun	0.10	0.88	0.95	44
1.213	the dust	True	Noun	0.23	0.89	0.93	55
1.214	the mud	True	Noun	0.15	0.84	0.92	53
1.215	the sand	True	Noun	0.10	0.88	0.93	46
1.22	the mountain or hill	True	Noun	0.17	0.89	0.97	73

Now, what could *iClassifier* do for YOU

Customized visualizations

Creating mapping and classifier categories of

- A certain classifier, lexeme, compound, or text
- Visualization of a synchronic timeframe (e.g. 18th Dynasty, 12th century)
- Diachronic changes - classifier, lemma, text, corpus
- Specific information sources = speakers, texts, lects, registers, scripts
- Specific geographical area
- Any other metadata query (e.g. all repeaters in a certain system)

Comparative concepts:

- * Lexical fields
- * Meanings

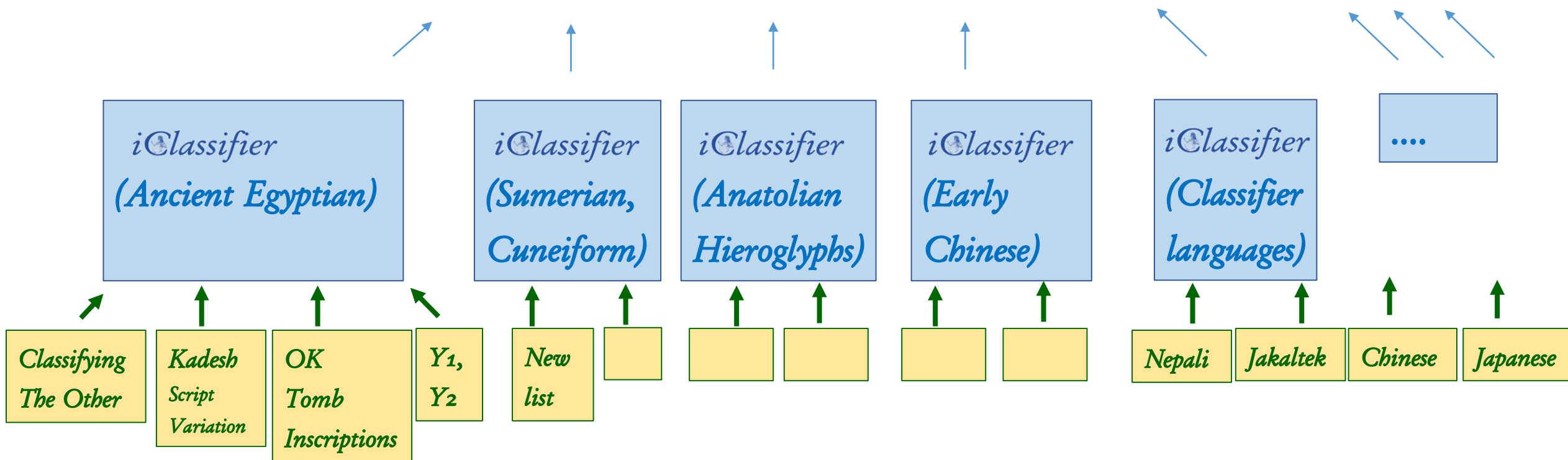
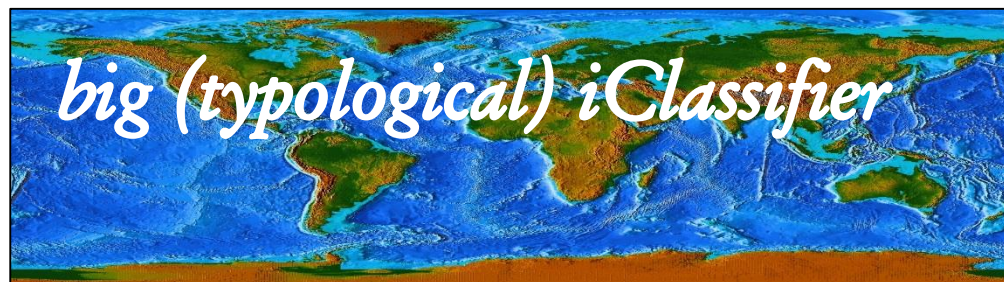
One system – many datasets

Editing permissions-

Lemma, token*, witness, bibliography

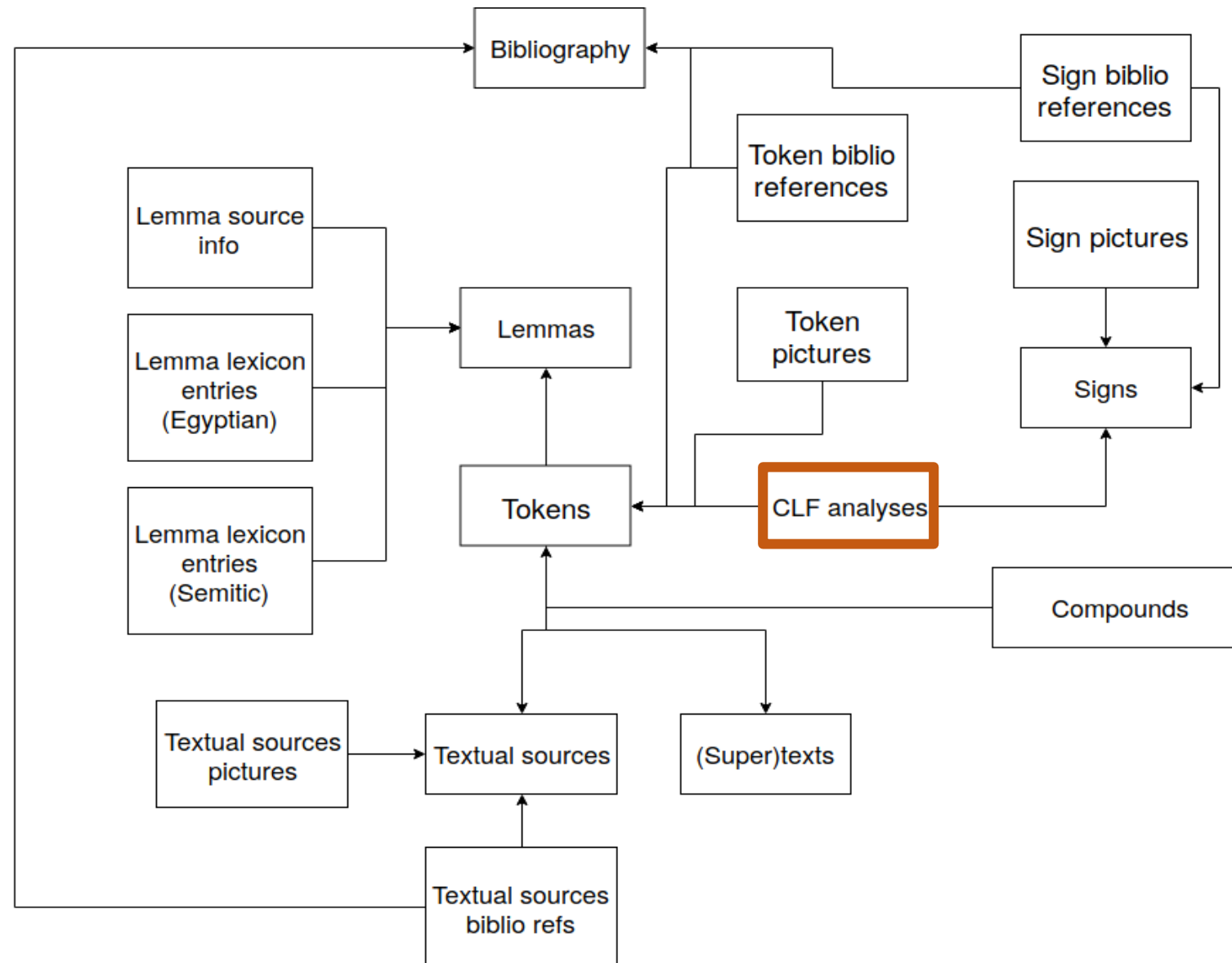
iClassifier

Our Vision



❖ Unified project structure (the same queries to multiple databases):

❖ The structure is modular: only the “Tokens” table is absolutely necessary for classifier analysis



Behind the scenes

Backend (data storage and web server):

SQLite database + Python
(a Flask+Gunicorn web stack)

Frontend (websites):

Hand-written JavaScript using jQuery (a general-purpose JavaScript library).

Maps are drawn using the JavaScript library Vis.js and library called JQWidgets for the tree-like menus.

Hieroglyphs are drawn using Serge Rosmorduc's JSesh library (Java).
Opensource- Available online via Jetty webserver and Ring
middleware, which are is bundled together in a small Clojure program
<https://github.com/macleginn/jsesh-web>

Tools for semi-automatic tagging of CLs

Token- classifier analysis

- * Annotating existing datasets by extracting classification data.
- * Adding CL analysis to your tool and exporting edits and new Items.

*i*Classifier
Our Vision

We aim to paint the knowledge organization mapping of languages and cultures as they are reflected in their classifier system.

Our tool is based on the careful application of *dynamic relational pattern recognition*.

iClassifier offers a new method to study variation, we do not content ourselves with descriptive collection.

We aim at research for patterns, compatibility and incompatibility rules, and synchronic and diachronic dynamics of language change.

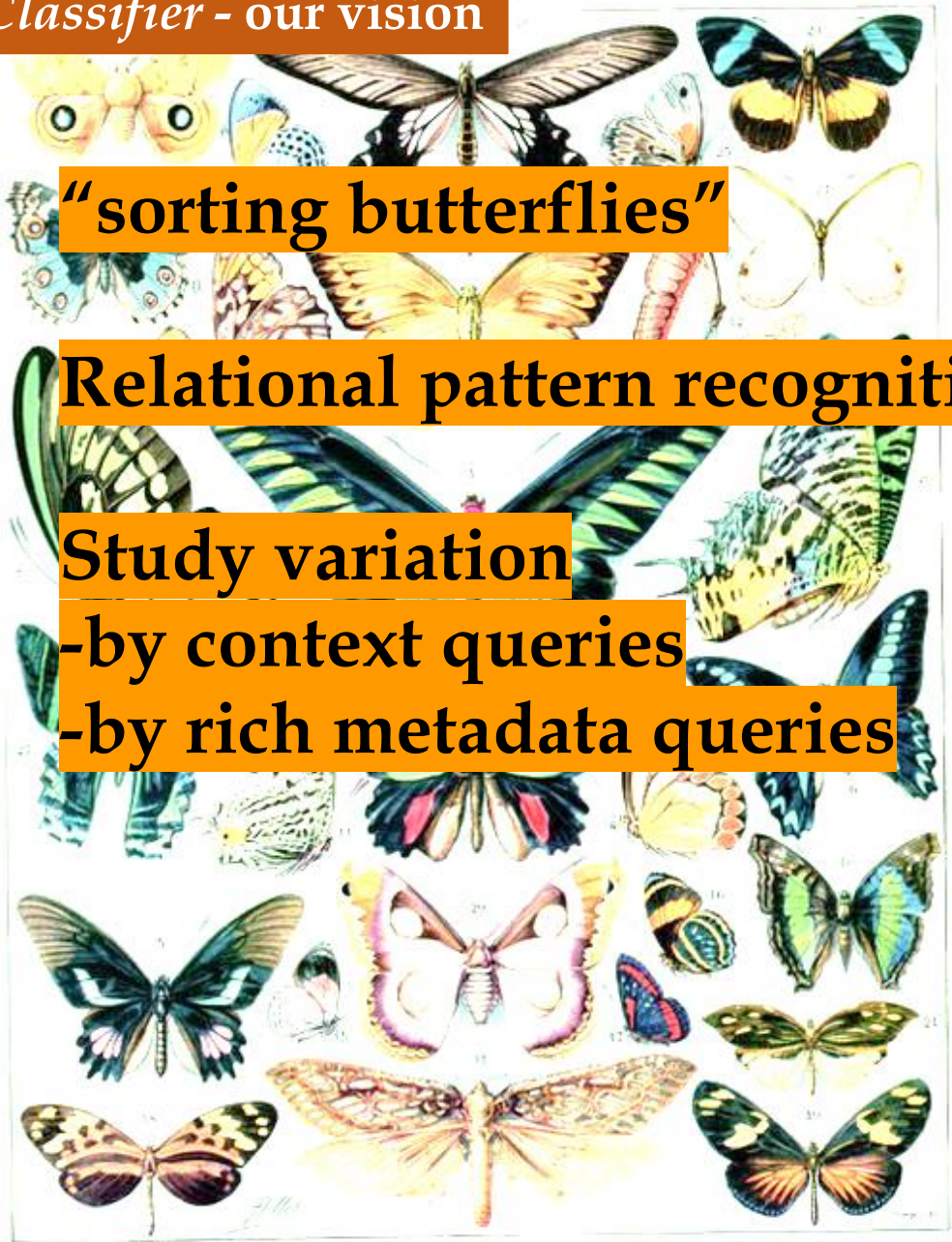
“sorting butterflies”

Relational pattern recognition

Study variation

-by context queries

-by rich metadata queries



Not a database but an online research platform and collaborative project

Data is open to edits- researchers can contribute (with full credits and citing link), and:

- Comment and discuss entries.
- Write posts about each classifier and include their analysis and observations.

Thank you! 

[http:// *iClassifier* .pw](http://iClassifier.pw)



Contact us –

iclassifierteam@gmail.com

Haleli.harel@mail.huji.ac.il

Orly.Goldwasser@mail.huji.ac.il

References

- Bauer, B. L. M. 2017. *Nominal Apposition in Indo-European Its Forms and Functions, and Its Evolution in Latin-Romance*. Berlin – Boston: De Gruyter.
- Borchers, Dörte. 2008. *A grammar of Sunwar: descriptive grammar, paradigms, texts and glossary*. Leiden: Brill.
- Chen, Y. 2016. “The Prototypical Determinatives in Egyptian and Chinese Writing.” *Scripta* 8: 101-126.
- Craig, C. (ed.). 1986. *Noun Classes and Categorization. Proceedings of a Symposium on Categorization and Noun Classification, Eugene, Oregon, October 1983*. Amsterdam & Philadelphia: John Benjamins.
- Goldwasser, Orly. 2002. *Prophets, Lovers and Giraffes. Wor(l)d Classification in Ancient Egypt*. Wiesbaden: Otto Harrassowitz.
- Goldwasser, Orly & Colette Grinevald. 2012. “What Are Determinatives Good For?,” in: E. Grossman, St. Polis & J. Winand (eds.), *Lexical Semantics in Ancient Egyptian*. Hamburg: Widmaier, 17–53.
- 2014. “At the Crossroad of Gender and Classifiers in Ancient Egyptian.” Surrey.
- Grinevald, C. 2012. “Appendix” in Goldwasser & Grinevald 2012: 46-51.
- 2015. “Classifiers, Linguistics of,” in: J. D. Wright (ed.), *International Encyclopaedia of the Social & Behavioral Sciences*. Amsterdam: Elsevier, 1973-1978.
- Haspelmath, M. & U. Tadmor. (eds.) 2009. *World Loanword Database. (WOLD)* Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at <https://wold.clld.org/semanticfield/20>, Accessed on 2019-02-10.)
- Kammerzell, F. 2015. “Egyptian Verb Classifiers,” in: P. Kousoulis & N. Lazaridis (eds.), *Proceedings of the Tenth International Congress of Egyptologists*. Rhodes, 22-29 May 2008. Leuven: Peeters, 1395-1416.
- Lincke, E.S. & F. Kammerzell 2012. “Egyptian Classifiers at the Interface of Lexical-Semantics and Pragmatics,” in: E. Grossman, S. Polis & J. Winand (eds.), *Lexical Semantics in Ancient Egypt*. Hamburg: Widmaier, 55–112.
- Polis, S. & S. Rosmorduc. 2015. “The Hieroglyphic Sign Functions. Suggestions for a Revised Taxonomy.” Uljas et al. (eds.) *Fuzzy Boundaries. Festschrift für Antonio Loprieno*. volume I, 149-174.
- Rude, N. 1986. “Graphemic Classifiers in Egyptian Hieroglyphics and Mesopotamian Cuneiform,” in: C. Craig (ed.), *Noun Classes and Categorization: Proceedings of a Symposium on Categorization and Noun Classification*. Amsterdam & Philadelphia: John Benjamins Publishing Company, 133-138.
- Selz, Gebhard J., C. Grinevald and O. Goldwasser. 2017. “The Question of Sumerian Determinatives: Inventory, Classifier Analysis, and Comparison to Egyptian Classifiers,” in: D. Werning (ed.) *Proceedings of the Fifth International Conference on Egyptian-Coptic Linguistics (Crossroads V) Berlin, February 17–20, 2016*. Hamburg: Widmaier, 281-344.

Customized visualizations

Creating mapping and classifier categories of:

- A Text
- Specific timeframe
- Place
- Any metadata query

- Lemmas
- Compounds
- Tokens
- Witnesses
- Supertexts
- Bibliography

Lemma editor

Select lemma

<<< Show previous | Show next >>>

Transliteration:*

brt

Source: TLA

Select source

Meaning:*

agreement, pact, Vertrag (z

Pages:*

56650

Transliteration:

brt

Source: ramses

Select source

Meaning:

contrat

Pages:

95376

Remove variant

Transliteration:

birita

Source: Hoch 1994

Select source

Meaning:

obligatory service, treaty of

Pages:

no. 135

Remove variant

+ Add variant

Root:

Lexical field:

Social and politica ▾

Secondary lexical field:

Demotic:

Demotic meaning:

Coptic:

Coptic meaning:

Source root:

brh

Source meaning:

Cognates:

Language

Biblical Hebrew

Cognate

ברית

Meaning

treaty; covenan

Source: BDB

Select source

Pages, nos.

Discussion

Remove cognate

Language

Akkadian

Cognate

barû, biritû

Meaning

bind, fetter

Source:

Select source

Pages, nos.

Discussion

birît possible lexicalization?

Remove cognate

Language

Ugaritic

Cognate

Meaning

Source: DULAT

Select source

Pages, nos.

Discussion

nly brt 'divination', citing BH

Remove cognate

Add cognate

Contact type:

Certainty level:

☐ 1 ☐ 2 ☒ 3

Number of occurrences in Hoch:

7

Comments:

Remove borrowing info

Add borrowing info

Add bibliographical reference

Comments:

Kitchen 1997 links bryt and brt. (H 135 and 124). Kitchen 1974b "brt" 'bond'> 'covenant, contract, treaty'.
Görg 1979 "Die Vorkommen prasentieren sich

Save lemma and clear form

Save lemma and continue editing

Delete

Token editor

Select a token for a full description or in order to modify it.

Select token

<<< Show previous | Show next >>>



Lemma: Lemma: brt 'agreement, pact, Vertrag (zur Dienstpflicht)'
The token is a part of a compound:
☐ Yes ☒ No

Change lemma

Supertext: not set
Choose supertext

Coordinates in the supertext:

Witness: Nauri decree
Change witness

Coordinates in the witness:

32

Add token picture
(a witness must be selected)

Picture ID: 4



Show picture in context

Comments:

Delete picture

MDC:
b-bA-A-r:Z1-ti-i
Get hieroglyphs

MDC with markup:

Copy MDC Refresh classifiers

Phonetic reconstruction:

Transliteration:

brt

Translation:

Classification status:
☐ CL ☒ NC ☐ NR ☐ TNP

Context meaning:

obligatory service

Part of speech:

Noun ▾

Add bibliographical reference

Comments:

Modify entry Delete entry

Edit witnesses

Select witness

Witness name: Nauri decree

Select supertext

The chosen supertext:

Choose the script

The chosen script: Hieroglyphs

Choose the object type

The chosen object type: Wall

Choose the text type

The chosen text type: Royal decree/warrant

Select TopBib volume:

Choose the location

TopBib ID of the chosen location: 701-060-190

Choose the period (from)

Choose the date (from)

Choose the period (to)

Choose the date (to)

The chosen endpoints: Sethos I Menmaatre; Sethos I Menmaatre

The chosen endpoints: not set; not set

URL: http://ramses.ulg.ac.be/text/legacy/1071?page=35&pageLe

Publication: Griffiths Nauri Decree
Select source

Pages:

193-208

Comments:

Remove reference

Add bibliographical reference

Picture ID: 10



Show full picture Show delete button

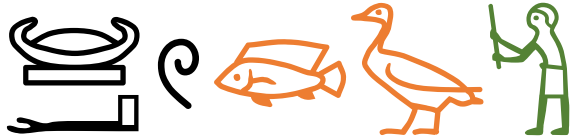
Comments:

Add picture

Comments:

http://aaew.bbaw.de/ila/servlet/GetTextDetails?u=guest&f=0&l=0&tc=20619&db=0

Modify witness Delete witness



wh^c

inf.:to fowl ^{CL[FISH]CL[BIRD]CL[FORCE]}

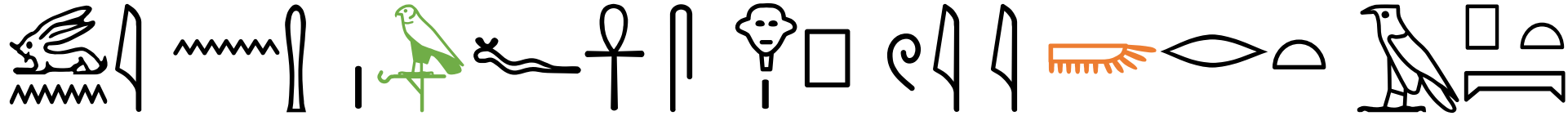
to fowl (catch fish and birds)



tw=i' wh'.w CL^[BIRD]CL^[FISH]CL^[ABSTRACT]CL^[FORCE]CL^[HUMAN]CL^[PLURAL]
 pron.1sg inf.:to-fowl
 1st-Present

‘(when) *I am fishing*’

(pAnastasi IV 12,7.)



<i>Wn=in</i>	<i>hm</i>	<i>CL^[DIVINE]=f</i>	<i>'nh-wd^c-snb</i>	<i>hr</i>	<i>p3</i>	<i>CL^[FEATHER]</i>	<i>r</i>	<i>t3</i>	<i>p.t</i>	<i>CL^[SKY]</i>
Vb.	N	=suff.pro.		prep. inf.			prep.	def.art.f	N	
<i>and</i>	<i>majesty</i>	<i>=his</i>	<i>LPH</i>	<i>flew</i>			<i>to</i>	<i>the</i>	<i>sky</i>	

*‘and his **majesty**, life prosperity and health, **flew** to the sky/heaven’*
 (p.d’Orbiney 19,3.)

Jakaltek (Mayan)

xil naj xuwan no7 lab'a
saw CL^[MAN] John CL^[ANIMAL] snake

‘John saw a snake’

(Craig 1986: 264)

Jakaltek (Mayan)

xil naj xuwan no7 lab'a
saw CL^[MAN] John CL^[ANIMAL] snake

‘John saw a snake’

(Craig 1986: 264)

Egyptian (Afroasiatic)



psḥ CL^[TOOTH] CL^[XXXX]=f in ḥf3.w CL^[SNAKE]
vb=3msg prep. N
his-being-bitten by snake

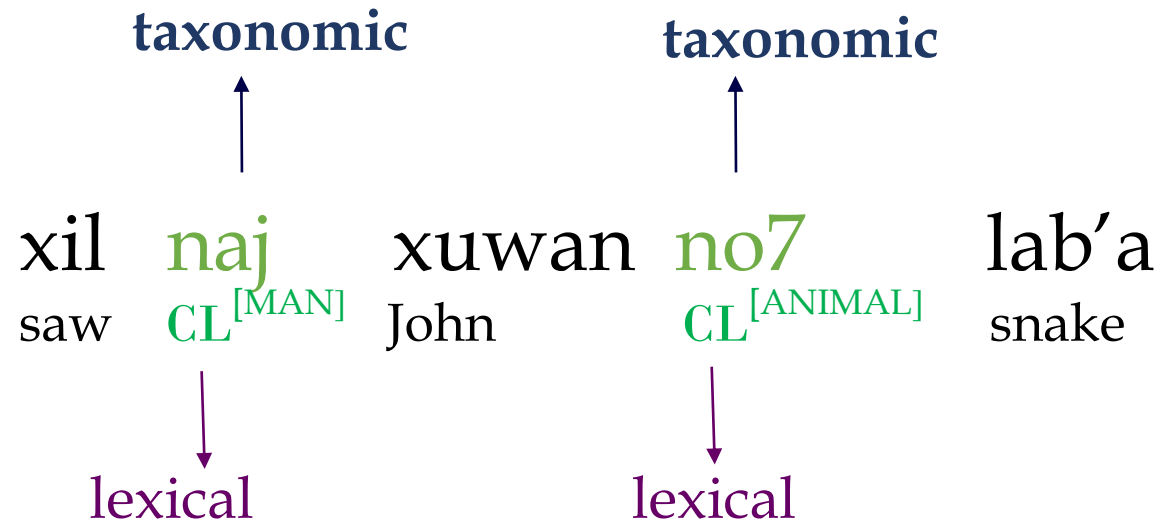
‘(his being) bitten by a snake’

(Dream book, p.Beatty 3, 7,19a)

Jacaltec (Mayan)

Classifier type

Classifier level



‘John saw a snake’
(Craig 1986: 264)

Jacaltepec (Mayan)

Classifier type

Classifier level

Schematic (made-of)

↑
no7
CL^[ANIMAL]

xanab
sandal

↓
lexical

‘sandal’
(Craig 1977: 134)

Schematic (made-of)

↑
no7
CL^[ANIMAL]

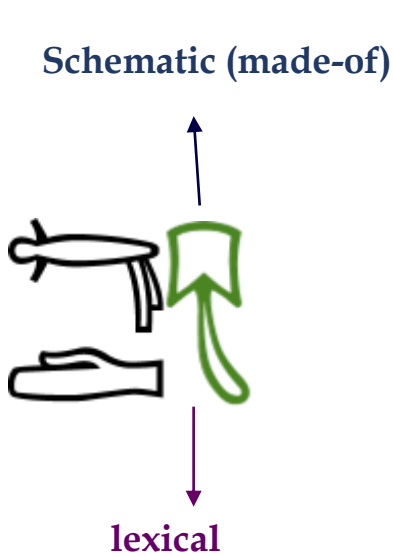
xapun
soap

↓
lexical

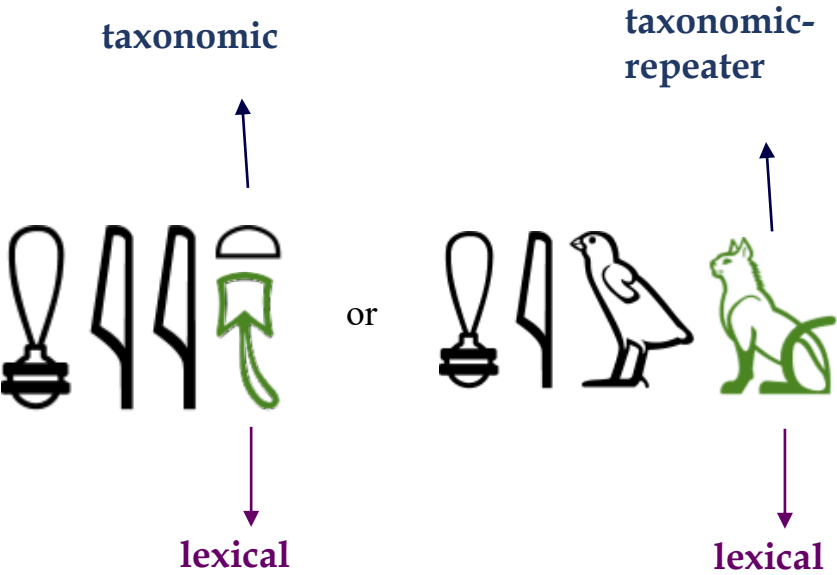
‘soap’
(Craig 1977: 134)

Classifier type

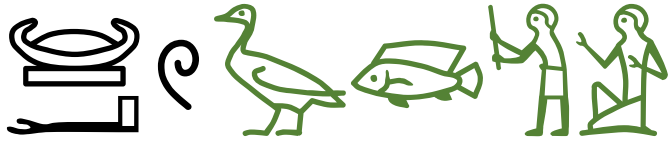
Classifier level



‘skin’
(Faulkner 1972: 274)



‘cat’
(Faulkner 1972: 105)



wh^c.w

Fowler CL^[BIRD] CL^[FISH] CL^[FORCE] CL^[HUMAN-MALE]

‘fowler’
(Faulkner 1972: 274)