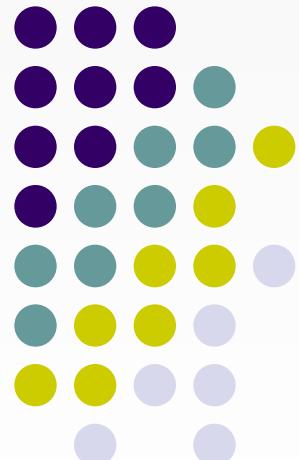


The Ramses Project: Exploring Ancient Egyptian linguistic data using a richly annotated corpus

St. Polis (F.R.S.-FNRS – ULg) & J. Winand (ULg)



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1. Introduction

Outline of the talk



- The Ramses project
 - Background information & history of the project
 - Goals
- Structure and capabilities of Ramses
 - Progress (encoding of texts and annotation)
 - Current state of the IT developments
- Three case studies
 - Graphemics and argument structure
 - Morphological variation: diaphasic and diachronic dimensions
 - Macro-syntax: clause chaining
- Conclusions



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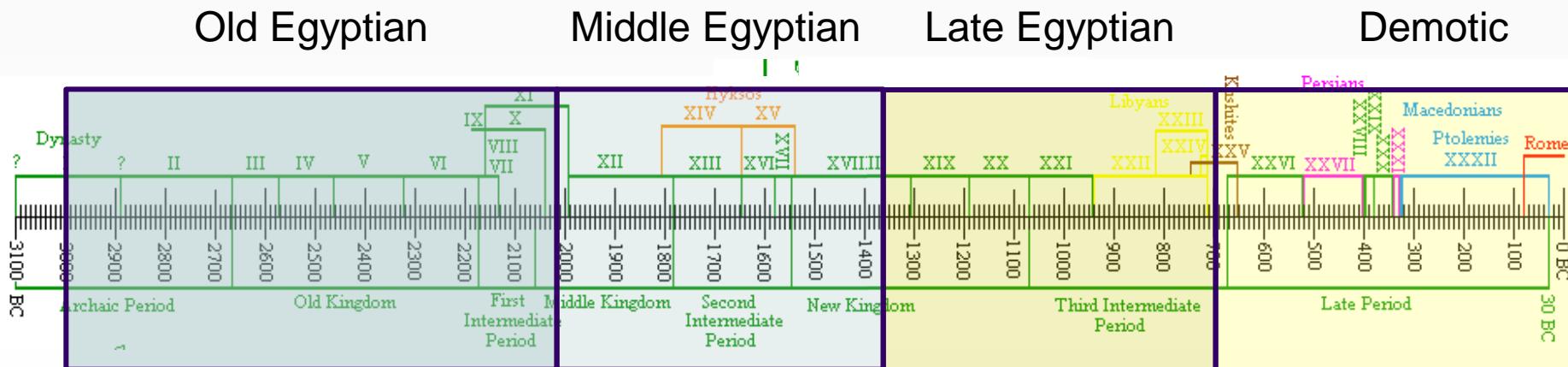


1. Introduction

The Ramses project: Background information



Building a richly annotated historical corpus of all Late Egyptian texts

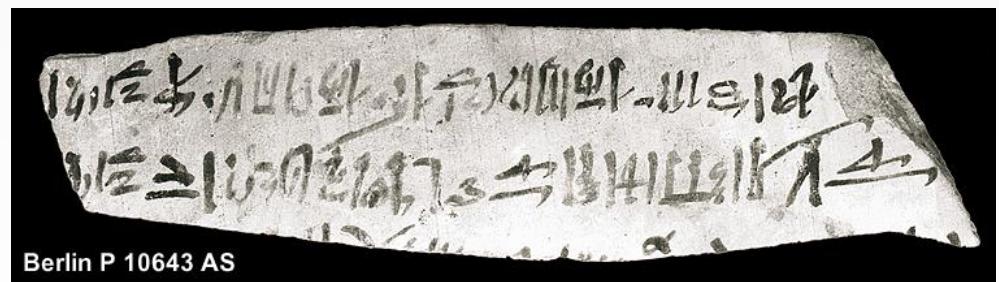


1. Introduction

The Ramses project: Background information



Building a richly annotated historical corpus of all Late Egyptian texts



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1. Introduction

The Ramses project: Background information



Building a richly annotated historical corpus of all Late Egyptian texts



F35-I9:D21-W:y-G41-A-V30:n:t*y-i-W-A1-D21-D&d-t*W:f



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1. Introduction

The Ramses project: Background information



- 2006: Start
 - Jean Winand (head of the project); Stéphane Polis (co-director); Serge Rosmorduc (Paris; IT development and database conception)
- 2007: First funding (University of Liège)
 - PhD student: Laurence Neven
- 2008: Second funding (National Fund for Scientific Research - Belgium)
 - PhD students: Stéphanie Gohy & Anne-Claude-Honnay
- 2008-2013: Third funding (“Action de recherche concertée”)
 - Post-docs: Dominique Lefèvre, Eitan Grossman, Todd Gillen
 - PhD students in Egyptology: Guillaume Lescuyer, Jill Raimondo, Nathalie Sojic, Alessandro Stella
 - PhD students in computer sciences: Benjamin Martin Leon
 - Collaborations with other institutions and laboratories: École Pratique des Hautes Études (Paris); Laboratoire d’Analyse Statistique des Données Textuelles (Liège); NotaBene (Nicolas Mazzotta); etc.
- 2013-...: Online access



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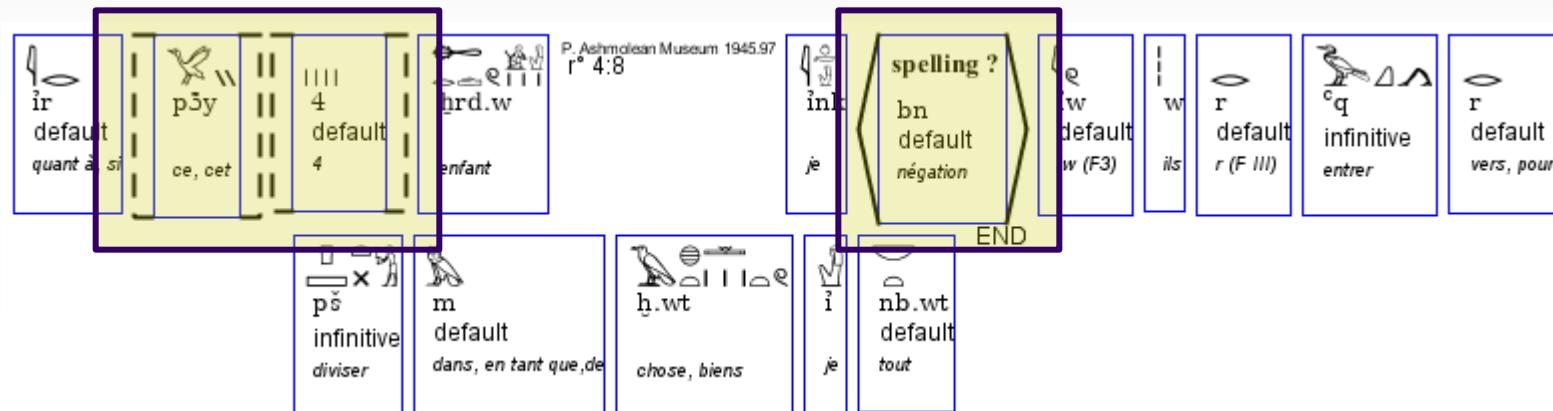
1. Introduction

The Ramses project: Goal

An efficient tool in philology and linguistics

The corpus supports:

- Ecdotic descriptors (textual criticism is fully integrated)



1. Introduction

The Ramses project: Goal



An efficient tool in philology and linguistics

The corpus supports:

- Ecdotic descriptors (textual criticism is fully integrated)
- Graphemic level (hieroglyphic transcription)

Brief, pBM 10419, Brief des Djehuti-mesu an Hafy

[detailed information for text] [position in hierarchical tree of objects and texts]

(display at beginning of text)

[1] zXA,(w)- DHw,tj-ms,w -n-pA-xr-aA-Sps,j n zXA,(w) HAfy n pr jmn-raw nswt-nTr,(Pl.) [2] [m]
[anx-wDA]-^bs(nb)^b Hz(w),t nTr =k Sps,j [b]^bmn-raw nswt-nTr,(Pl.) bA wr-Sf,yt [3] (j)tm,w xnt,j-jp,t=f
(Kartusche)HqA-wAs,t<|Kartusche> wr jwn,w jty-tA-Sma,w [4] nbw,ty xnt,j-nb-r-Dr nTr-aA-n-zp-tp,j nb
jmi n =k anx-wDA-s(nb) [5] aHa,w qA jAw,t aA.t nfr.t Hzw,t m-bAH jmn pA ptr =j|<k> [C] [6] raw-nb
zp-2

Der Schreiber Djehuti-mesu von der großen und prächtigen Königsnekropole an den Schreiber des Tempel des Amun-Re, des Königs der Götter: In Leben-Heil-und-Gesundheit und in der Gunst deines prächtigen Gottes, des Königs der Götter und, des Ba, der groß an Ansehen ist und des Atum, der vor seinem Heiligtum ist, des Herrschers von Theben, des Großen, des Heliopolitaners, des Souveräns von Oberägypten, dessen, der von Ombos und der vor dem Allherrn ist (Seth), dem große Gott des ersten Males, ..?..: Gegeben sei dir Leben-Heil-und-Gesundheit, eine lange Lebenszeit, ein erhabenes und vollkommenens Alter, Gunst vor Amun, dem der dich sieht - wirklich jeden Tag.

Thesaurus Linguae Aegyptiae (<http://aaew.bbaw.de/tla/>)



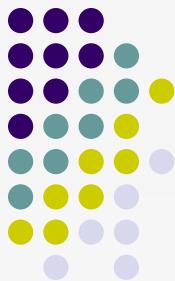
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1. Introduction

The Ramses project: Goal

An efficient tool in philology and linguistics

The corpus supports:

- Ecdotic descriptors (textual criticism is fully integrated)
- Graphemic level (hieroglyphic transcription)

				P. Ashmolean Museum 1945.97 r° 4:8		spelling ? bn					
default quant à, si	ce, cet	default 4	enfant		je	default négation	default iw (F3)	ils	default r (F III)	infinitive entrer	default vers, pour
						END					
infinitive diviser	default dans, en tant que, de	chose, biens	je	default tout							



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1. Introduction

The Ramses project: Goal



An efficient tool in philology and linguistics

The corpus supports:

- Ecdotic descriptors (textual criticism is fully integrated)
- Graphemic level (hieroglyphic transcription)
- Morpho-syntactic analysis
- Meta-data (with description and categorization of the texts)
- Bibliographical references

with an evolutionary database design



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2. Structure and capabilities of Ramses



Current state of the project

IT viewpoint

→ a relational database in SQL where the texts are represented and stored in XML



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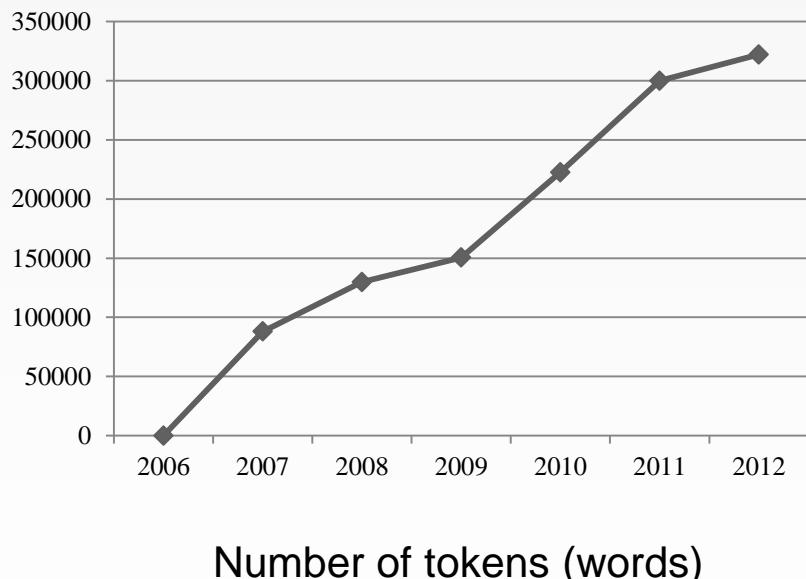
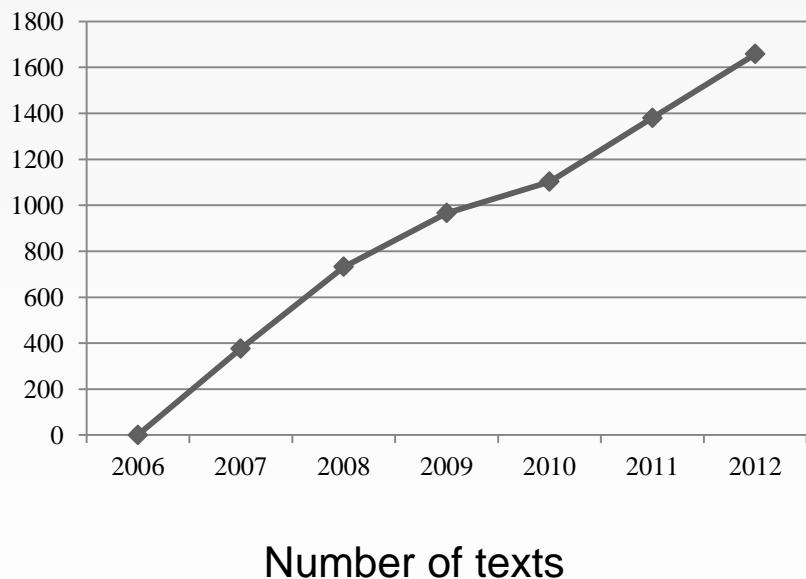


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2. Structure and capabilities of Ramses

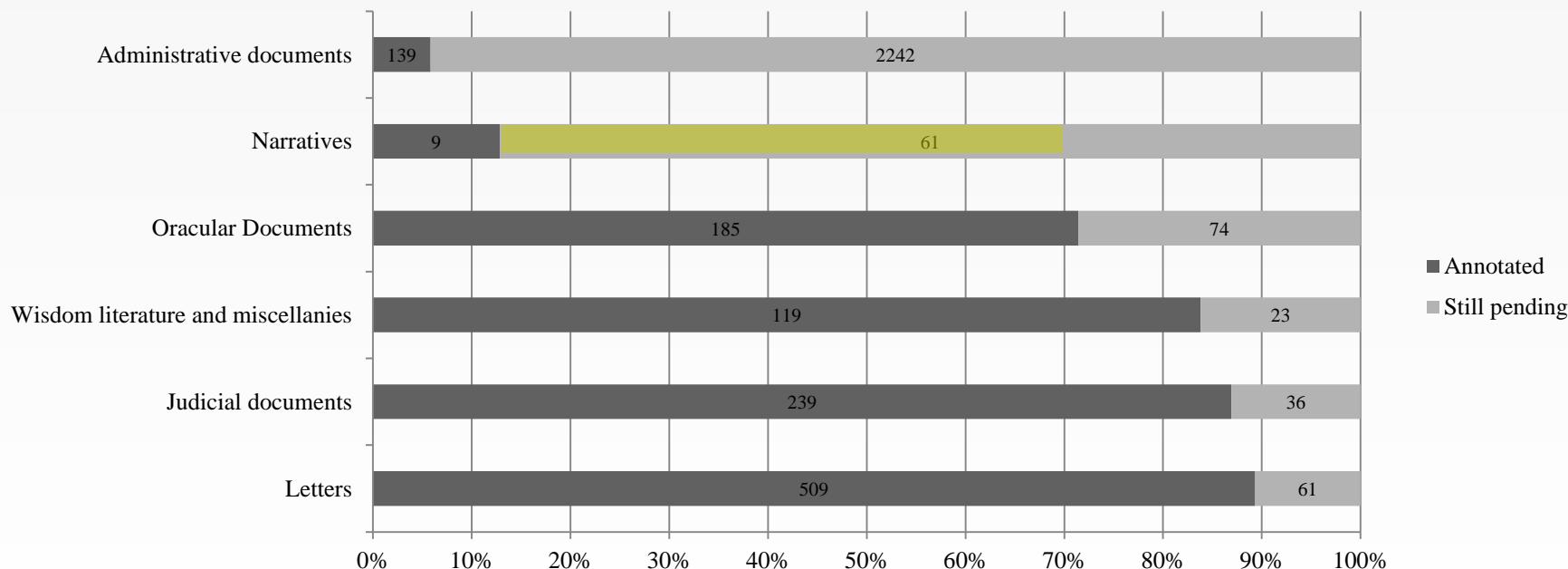
Progress in the encoding and annotation



2. Structure and capabilities of Ramses



Progress in the encoding and annotation

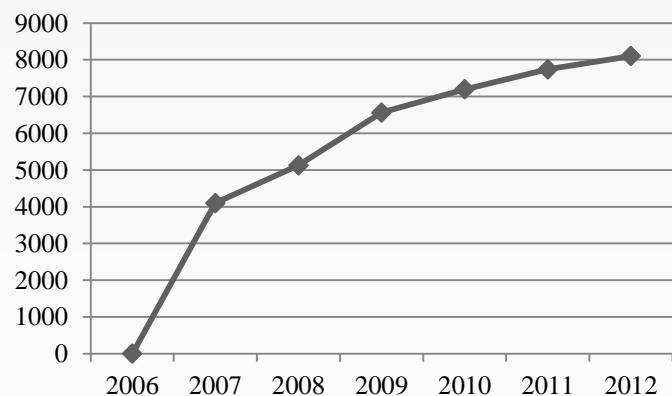




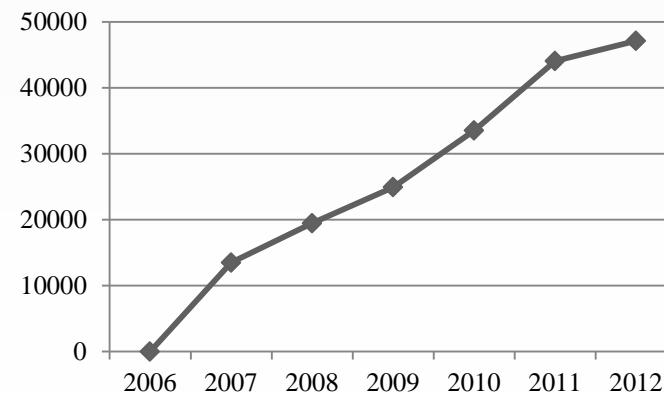
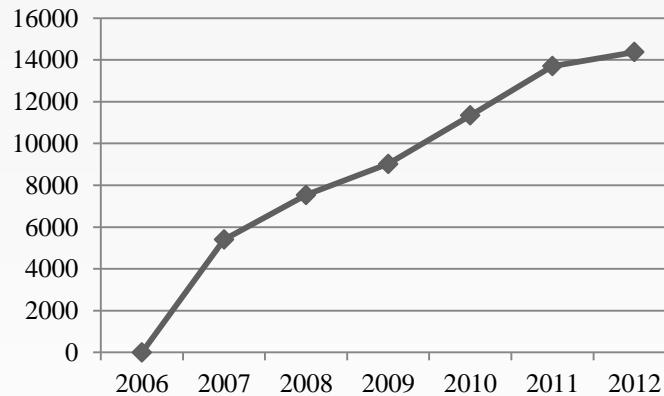
2. Structure and capabilities of Ramses

Progress in the encoding and annotation

Number of lemmata



Number of inflexions



Number of spellings

2. Structure and capabilities of Ramses

Structure of the database & software ergonomics



Two basic requirements:

- From the annotator's point of view, the editing software had to be user-friendly and to meet the criteria of speed and consistency of annotation.
- From the user's point of view, no loss of information should happen because of the process of encoding and annotating a text



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2. Structure and capabilities of Ramses

Structure of the database & software ergonomics



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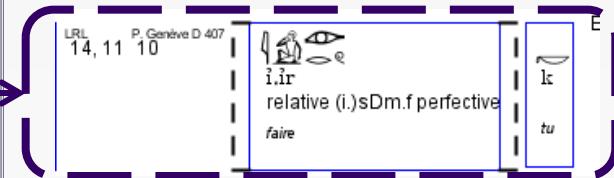


Structure of the database & software ergonomics

The screenshot shows the Ramses software interface with a main grid of morphological analysis results and a detailed view on the right.

Main Grid: The main area displays a grid of analysis results. Each result includes a small icon, a label (e.g., 'm', 'nb', 'sp-en'), and a description (e.g., 'default', 'tous', 'deux fois'). Some results are grouped by a dashed box labeled 'URL 14, 11 10' and 'P. Genève D 407'. The bottom of the grid has a row of buttons: 'Insérer mot', 'Mettre à jour mot', 'Statut des éléments', 'Noir', 'Rouge', 'Autre', 'Normal', 'Laoune', 'Complément de l'éditeur', 'Ajouter lacune', 'Ajouter Punctuation', and 'Ajouter espace'.

Detailed View: On the right, a detailed view of a specific entry is shown. It includes a large icon of a person, the text 'i.ir relative (i.)sDm.f perfective faire', and the labels 'URL 14, 11 10' and 'P. Genève D 407'. Below this are two boxes: one for 'Lemme' (with entries like 'I 1 (1)', 'I 2 (2)', etc.) and one for 'Flexion' (with entries like '+?1 [status: absolute; number: singular; gender: masculine]', '+?1 [status: absolute; number: singular; gender: masculine]', etc.). To the right of these are 'Graphie' (with entries like '?30266', '?30267', etc.) and 'Analyse' (with a large empty box).



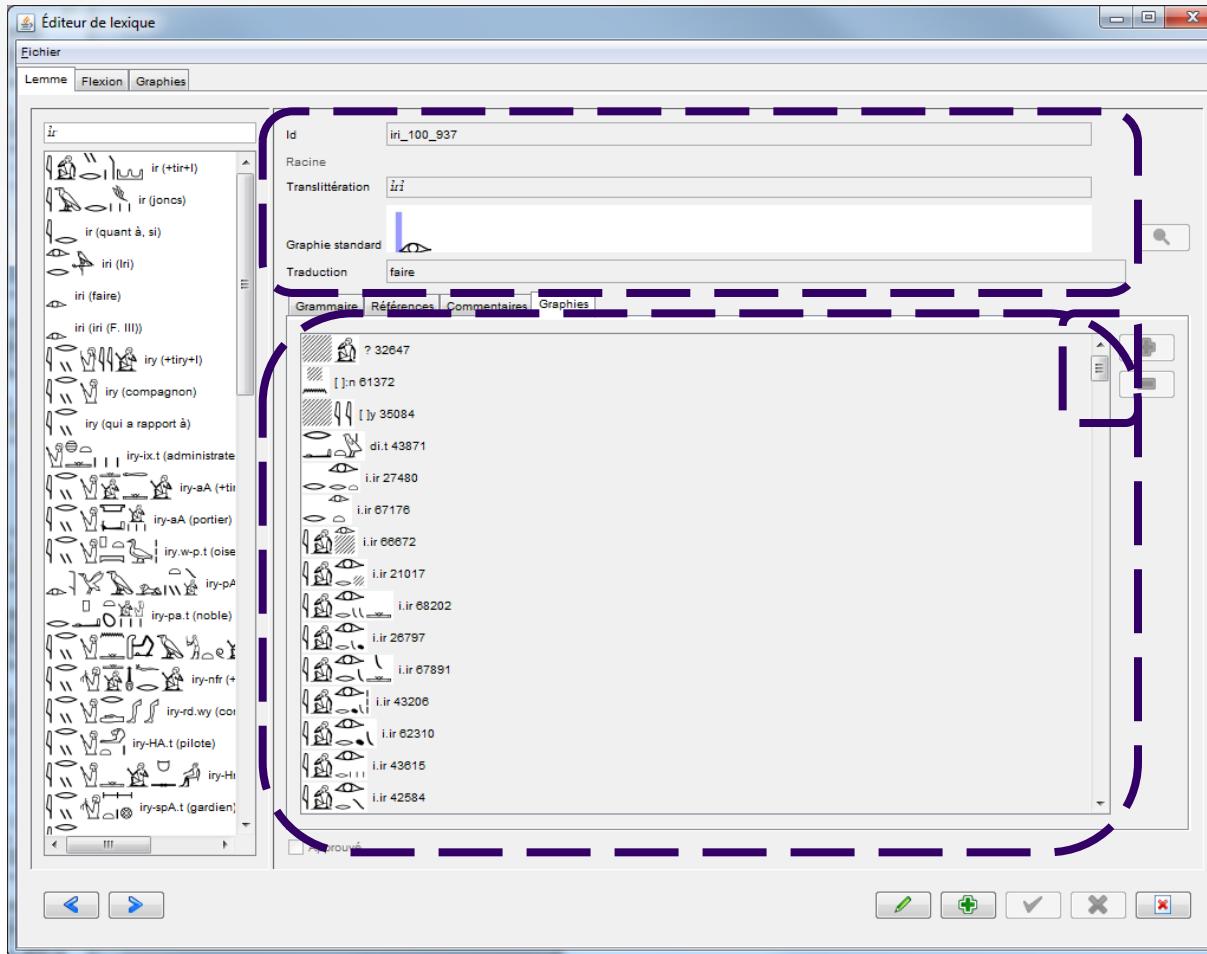
2. Structure and capabilities of Ramses

Structure of the database & software ergonomics



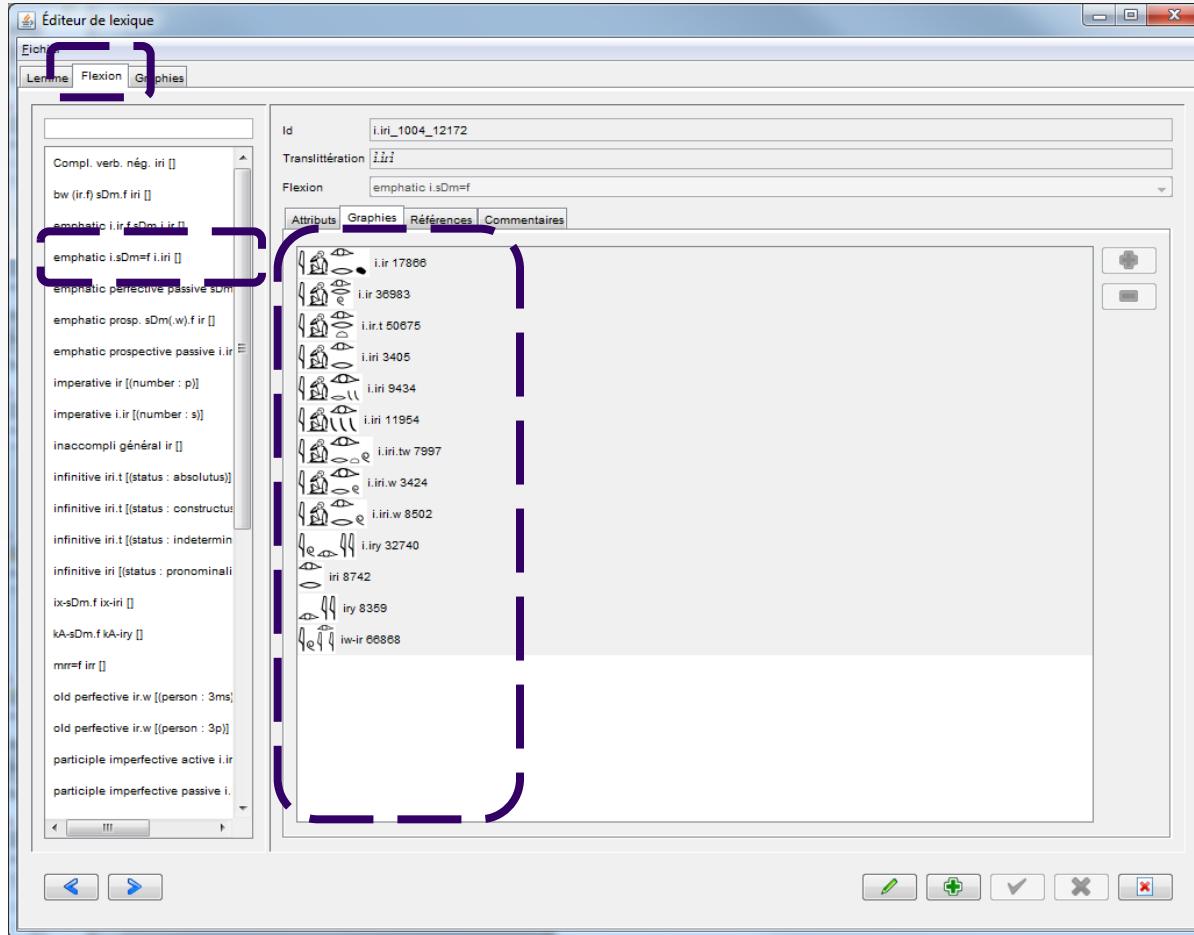
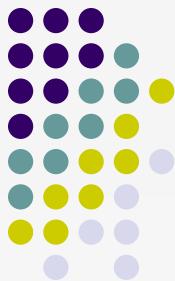
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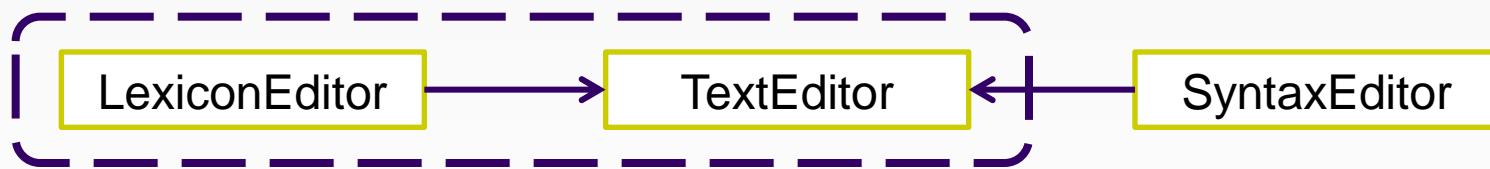


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Structure of the database & software ergonomics



2. Structure and capabilities of Ramses



Structure of the database & software ergonomics

Ramses 20111205 / P. Harris 500 (= P. BM 10060, LEST 01) (= Le Prince Prédestiné); id: 4

Fichier Menu textes Éditer Insérer Chercher Exportation Bibliographie Statistiques

Ponct. LES 2,3 END

Translittération gmh

Graphie standard

Traduction apercevoir

Grammaire Références Commentaires Graphies

Partie du discours verb

attribute value

morphological class	3-lit.
transitivity	transitive

inaccompli passif sDm.tw=f gmH.tw []

infinitive gmH [(status : absolutus)]

infinitive gmH [(status : constructus)]

infinitive gmH [(status : indeterminate)]

infinitive gmH [(status : pronominalis)]

participle imperfective active gmH []

participle perfective active gmH []

Id gmH 1004_8254

Translittération gmh

Flexion infinitive

Attributs Graphies Références Commentaires

gmH 5781

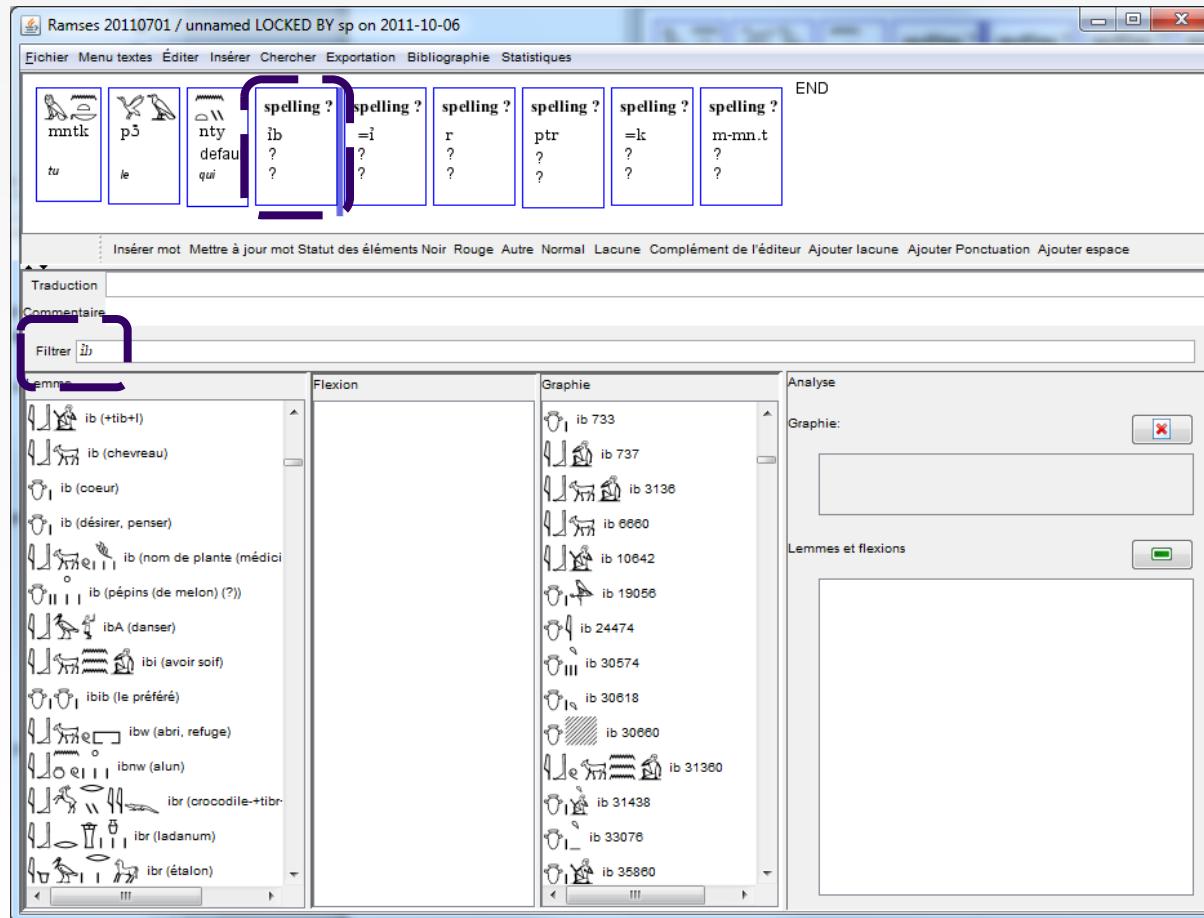
gmH 8253

gmH 63419

gmHw 63249

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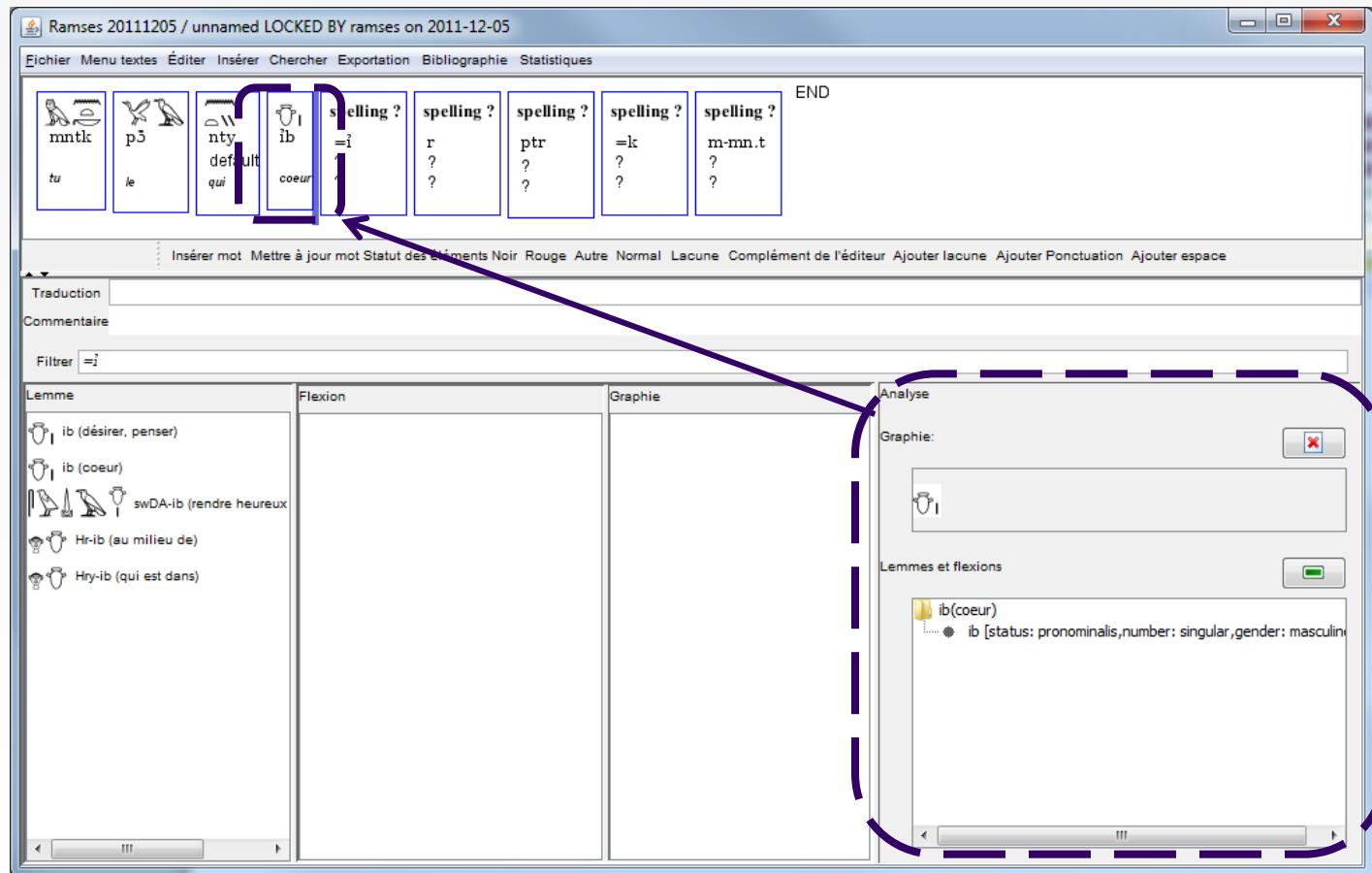


The screenshot displays the Ramses software interface, version 20110701, with a title bar indicating it is locked by 'sp' on 2011-10-06. The menu bar includes Fichier, Menu textes, Éditer, Insérer, Chercher, Exportation, Bibliographie, and Statistiques. The main window is divided into several panels:

- Lemme:** A list of lemmas with their corresponding hieroglyphs and meanings. One lemma, "ib (cheveau)", is highlighted with a blue box and a red arrow pointing to it.
- Flexion:** A list of flexions for the lemma "ib". One flexion, "ib [status: absolutus, number: singular, gender: masculine]", is highlighted with a blue box and a red arrow pointing to it.
- Graphie:** A list of graphies, including "ib 59114" (with a red arrow pointing to it) and "Ab 9949".
- Analyse:** A panel for analyzing the graphie "ib".
- Lemmes et flexions:** A panel showing the lemma "ib (coeur)" and its flexions, including "ib [status: pronominalis, number: singular, gender: masculine]".
- Bottom panels:** Three smaller panels showing hieroglyphs and their meanings: "ibr (crocodile-tibr+I)", "ib (ladanum)", and "ibr (élon)".

2. Structure and capabilities of Ramses

Structure of the database & software ergonomics



2. Structure and capabilities of Ramses

Structure of the database & software ergonomics



Two basic requirements:

- From the annotator's point of view, the editing software had to be user-friendly and to meet the criteria of speed and consistency of annotation.
- From the user's point of view, no loss of information should happen in the process of encoding and annotating a text
 - Unanalyzed chunks of graphemes



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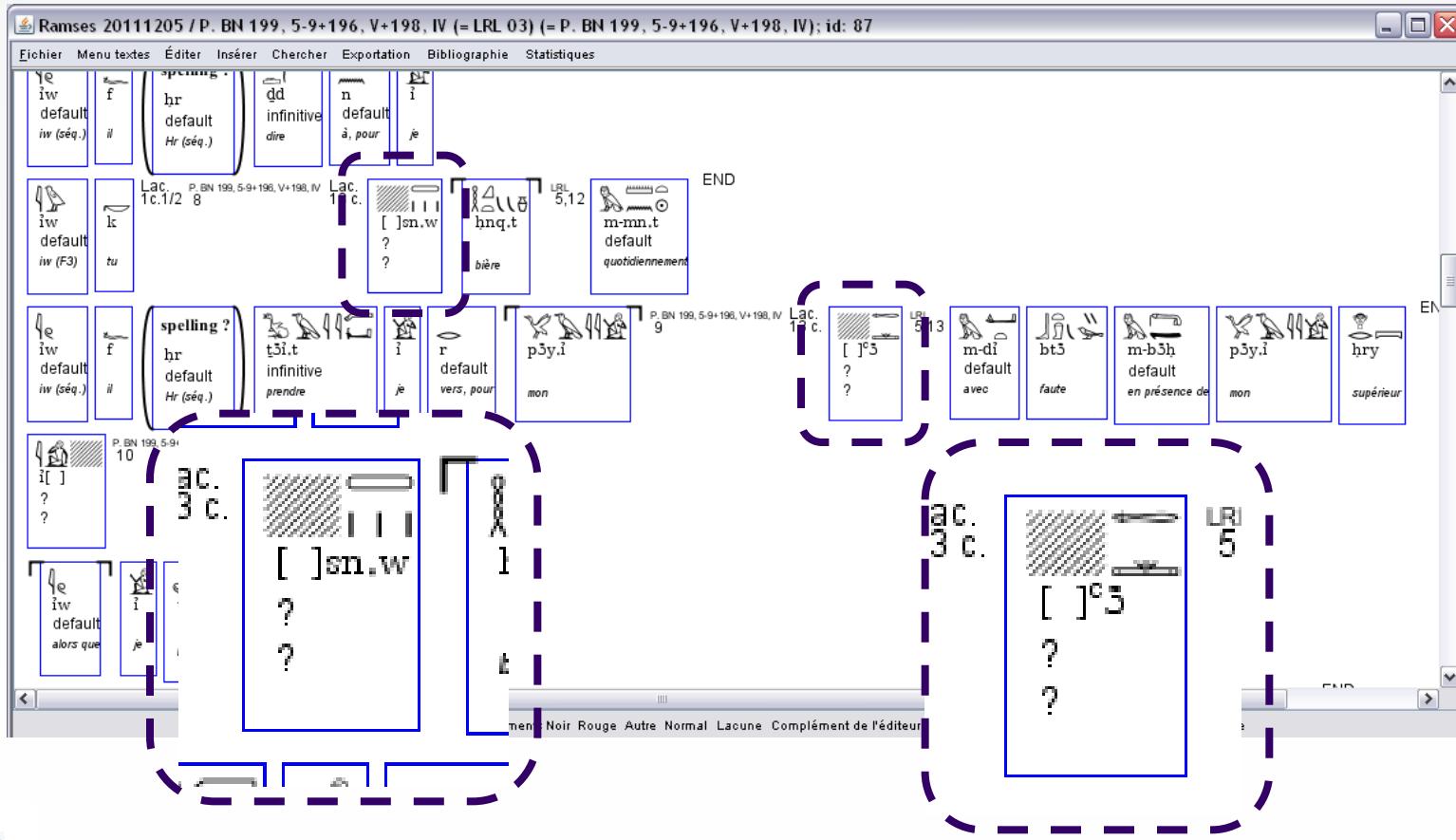
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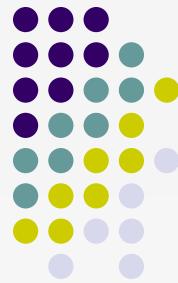
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2. Structure and capabilities of Ramses

Structure of the database & software ergonomics



Two basic requirements:

- From the annotator's point of view, the editing software had to be user-friendly and to meet the criteria of speed and consistency of annotation.
- From the user's point of view, no loss of information should happen because of the process of encoding and annotating a text
 - Unanalyzed chunks of graphemes
 - Coding of ambiguities



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2. Structure and capabilities of Ramses



Structure of the database & software ergonomics

The screenshot displays the Ramses software interface, version 20110330-SNAPSHOT, for the P. Turin 1978/208 manuscript (id: 1398). The main window shows a hierarchical structure of text fragments (r'1, r'2) with various linguistic annotations, including Egyptian hieroglyphs, phonetic transcriptions, and grammatical labels like 'ptr', 'diw', 'default', and 'AMBIGUOUS'. A specific section of the text is highlighted with a blue box. Below the main window, a toolbar provides various editing and analysis functions. The bottom half of the interface is divided into several panels: 'Traduction' (Translation) showing the sentence 'Vois, je vous ai envoyé/promets de vous envoyer 100 Khars de grains de mon entrepôt.', 'Commentaire' (Commentary), 'Analyse' (Analysis), 'Graphie' (Graphy), 'Lemmes et flexions' (Lemmas and flexions), and a detailed 'Lemmes et flexions' panel for the word 'rdi(donner)'. This detailed panel shows two entries: 'perfective sDm=f di' and 'subjunctive sDm=f di'. The entire interface is framed by a thick purple border.

2. Structure and capabilities of Ramses

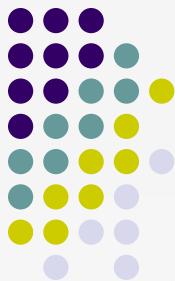


Structure of the database & software ergonomics

The screenshot shows the Ramses software interface. The main window displays a grid of signs, each with a preview, a label (e.g., 'mtw default', 'wp.w.t', 'spelling ?'), and a context menu. A specific sign is highlighted with a blue box and a context menu. The bottom right of the main window shows a detailed analysis window with tabs for 'Analyse' and 'Graphie'. The 'Analyse' tab shows a tree structure of lemmas and flexions, with 'bAk(travailler)' expanded to show 'infinitive bAk [status: absolutus]' and 'bAkw(travail)' expanded to show 'bAk [status: absolutus, number: singular, gender: masculine]'. The 'Graphie' tab shows a drawing of a person working. The bottom left of the main window shows a 'Lemmes et flexions' panel with a tree structure of 'bAk(travailler)' and 'bAkw(travail)'.

2. Structure and capabilities of Ramses

Structure of the database & software ergonomics



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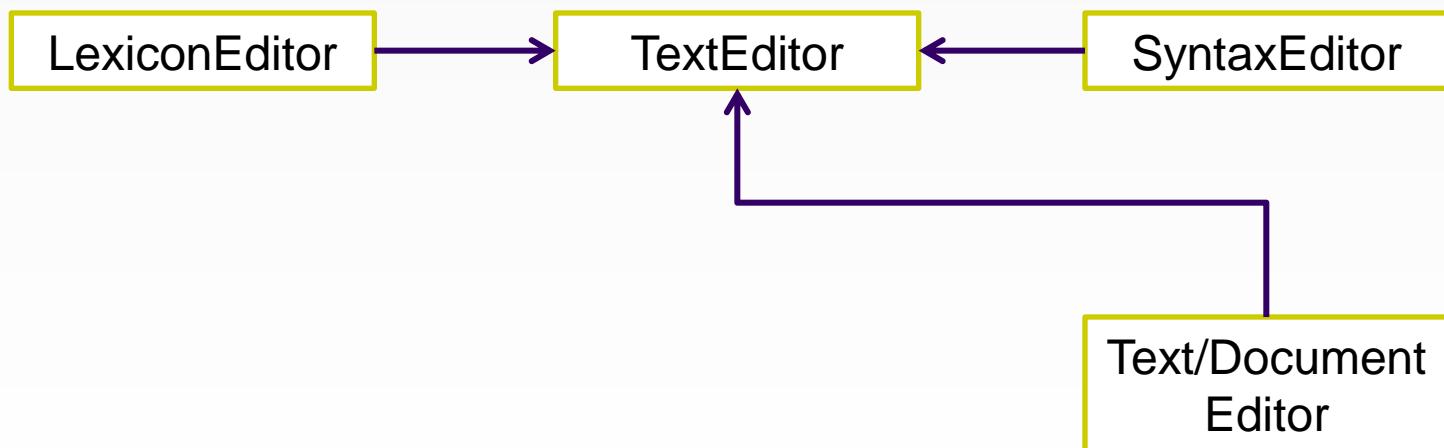
Fig9 - Ramses syntax editor

Fichier Édition View Fenêtre ?											
bn 	iw 	=i 	d(i).t 	aq 	pAy 	rmT 	r vers, pour	v° 13:26	pAy.i 	pr 	
				verbalPhrase function predicate	nounPhrase function subject		adverbialPhrase function argument				
negation	verbalPhrase function predicate	nounPhrase function subject		function object			verbalPred				
							verbalPred				

2. Structure and capabilities of Ramses

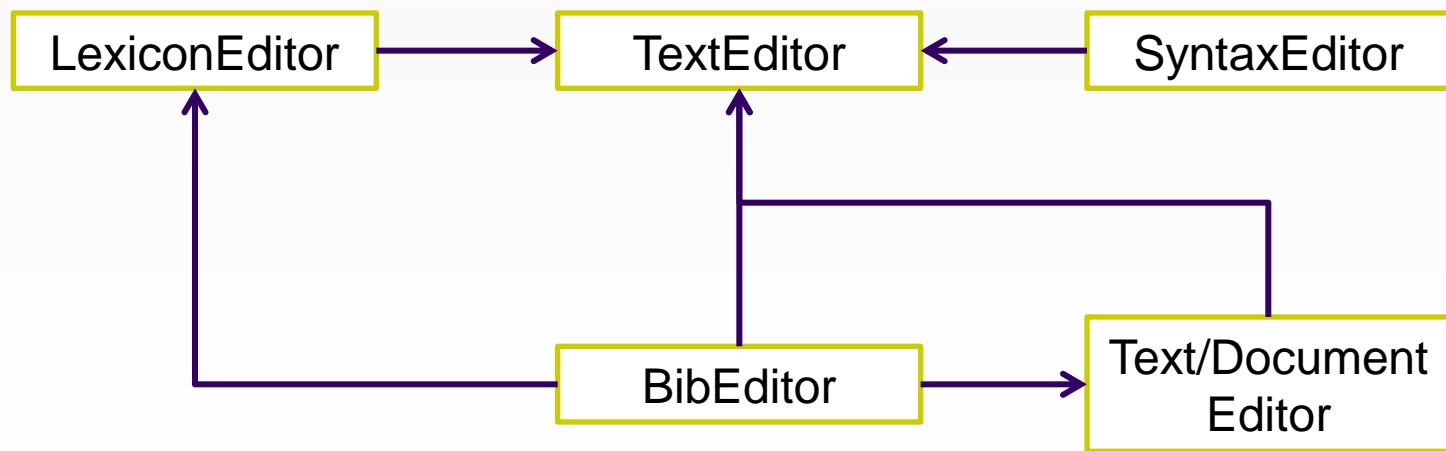


Encoding of metadata



2. Structure and capabilities of Ramses

Encoding of metadata



2. Structure and capabilities of Ramses

Encoding of metadata



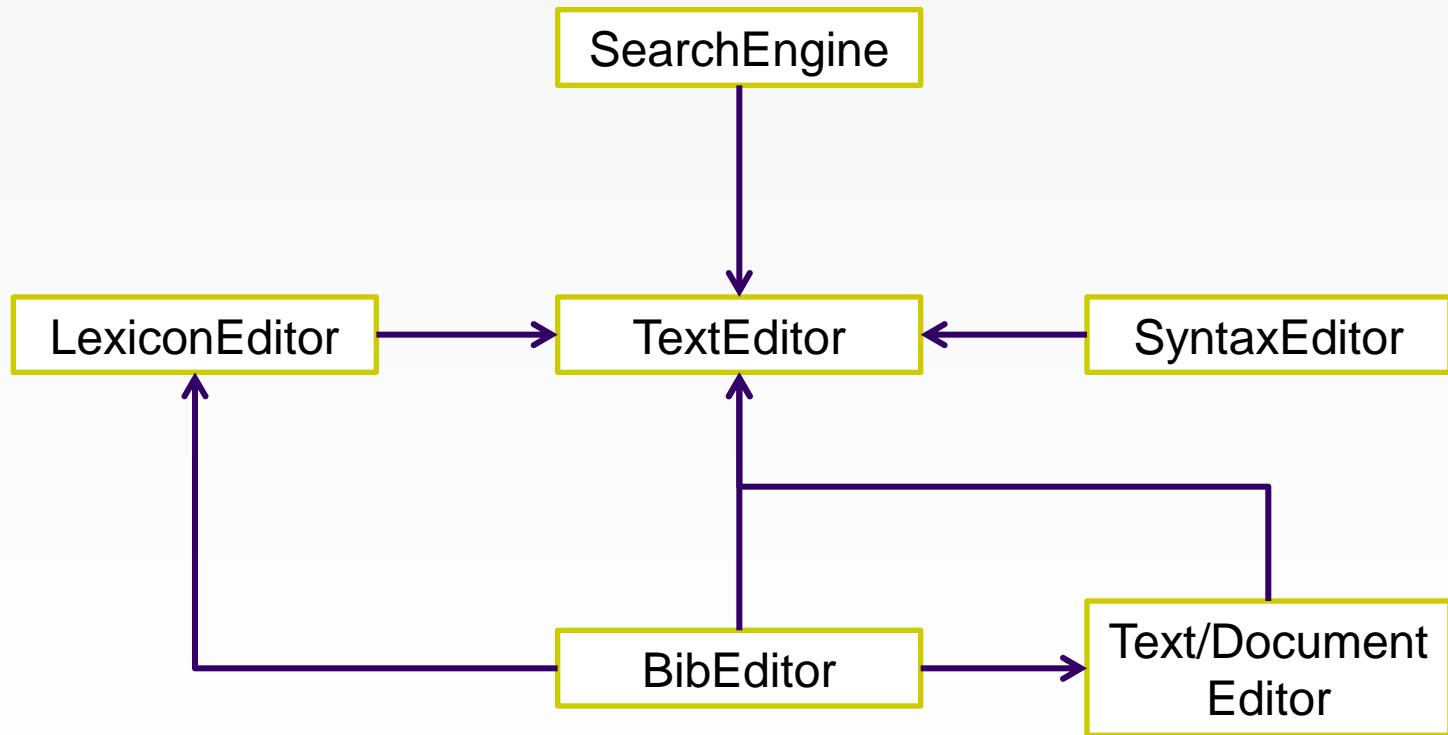
The screenshot shows the 'Éditeur de lexique' (Lexical Editor) software interface. At the top, there is a toolbar with buttons for 'Lemme', 'Flexion', and 'Graphies'. Below this is a search bar with the text 'ib' and an 'Id' field containing 'ib_100_734'. The main window has tabs for 'Grammaire', 'Références' (which is selected), 'Commentaires', and 'Graphies'. The 'Références' tab displays a list of citations:

- [DIC] Erman, Adolf & Grauw, Hermann, *Wörterbuch der ägyptischen Sprache*, I, Hinrichs, Leipzig, 1928, pp. 59, 10-60, 11
- [URL:TLA] <http://aaew.bbaw.de/tla/servlet/GetWcnDetails?u=ramses&f=0&l=0&wn=23290&db=0>
- [REF] Barbotin, Christophe, *Le papyrus Chassinat III [Planches I-XIII]*, RdÉ, 50, 1999, pp. 13
Sur l'expression ib=i r Sm
- [REF] Lorton, David, The Invocation Hymn at the Temple of Hibis, SAK, 21, 1994, pp. 175, n. I
ib en collocation avec HAty avec biblio ant.
- [REF] Jansen-Winkel, Karl, Exozentrische Komposita als Relativphrasen im älteren Ägyptisch. Zum Verständnis der Konstruktion nfr Hr "mit s" sur l'expression nDm ib "satisfait"
- [REF] Navailles, Robert & Neveu, François, Une ténèbreuse affaire: P. Bankes I, GM, 103, 1988, pp. 58, n. w
Sur l'expression Hr ib "de bon coeur, gratis"
- [REF] Wiebach, Silvia, Die Begegnung von Lebenden und Verstorbenen im Rahmen des thebanischen Talfestes, SAK, 13, 1986, pp. 282
ib en collocation
- [REF] Perdu, Olivier, Le monument de Samtutefnakht à Naples (première partie), RdÉ, 36, 1985, pp. 101, n. b
Sur l'expression ib Hr mw "être fidèle à"
- [REF] Roccati, Alessandro Giacomo, Su un passo di Hardjedef, JEA, 68, 1982, pp. 16-19
Sur l'expression ib=k pxA
- [REF] Andreu, Guillemette & Cauville, Sylvie, Vocabulaire absent du Wörterbuch (II), RdÉ, 30, 1978, pp. 11
ib r=k "fais attention"
- [REF] Meltzer, Edmund S., "Heart", ib or *inb in Egyptian?, JNES, 36, 1977, pp. 149-151

2. Structure and capabilities of Ramses



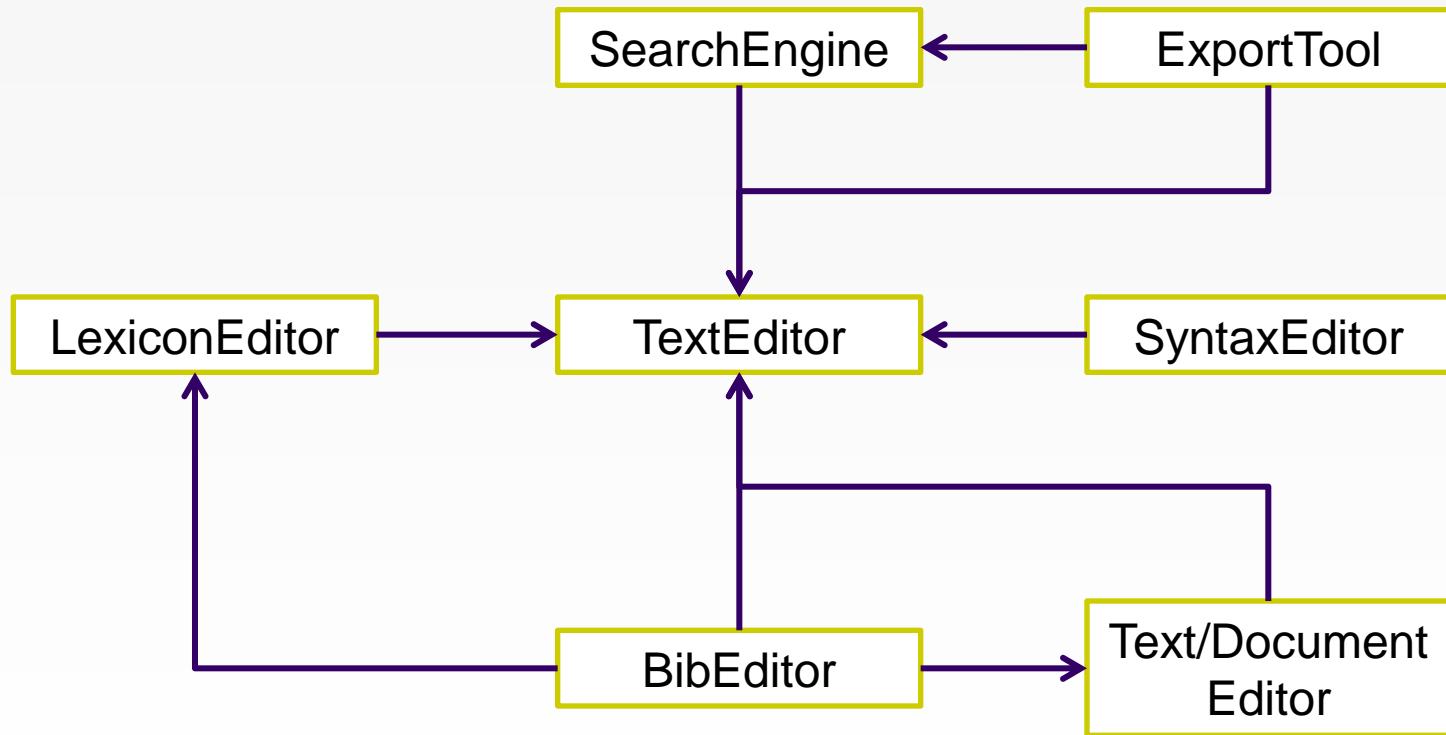
End-user modules



2. Structure and capabilities of Ramses



End-user modules



2. Structure and capabilities of Ramses

End-user modules



l	z	W	W	l	l	o	ll	ll	ll	ll	ll	ll	ll	ll	ll	ll	ll
ir	p3	nty	nb	lw	f	r	thi.t	rmt	m	sn							
ptcl	det	rlt	quant	gram	pron	gram	verb	sbst	rlt	pron							
null	art.def	-	quant	VerbP	suff	VerbP	ABi/tr	anim/count	prep	suff							
-	m.sg	-	-/m.sg	-	3sg.m	-	inf/constr	m.sg/abs	-	3pl							
quant à, si	le	qui	tout	lw (F3)	il	r (F III)	attaquer ; transgresser	homme	dans, en tant que,de	ils (pr. suf.)							
2	TRADUCTION : Quant à quiconque attaquerait une personne parmi eux, et qui (les) replacerait vers un autre lieu,																
Kanaïs, 18																	

3. New avenues for linguistic research



Introduction

Description of the SearchEngine

- Defining the corpus
 - Whole corpus
 - Sub-corpora (filters on the metadata about genres, date, provenance, writing support, writing system, etc.)



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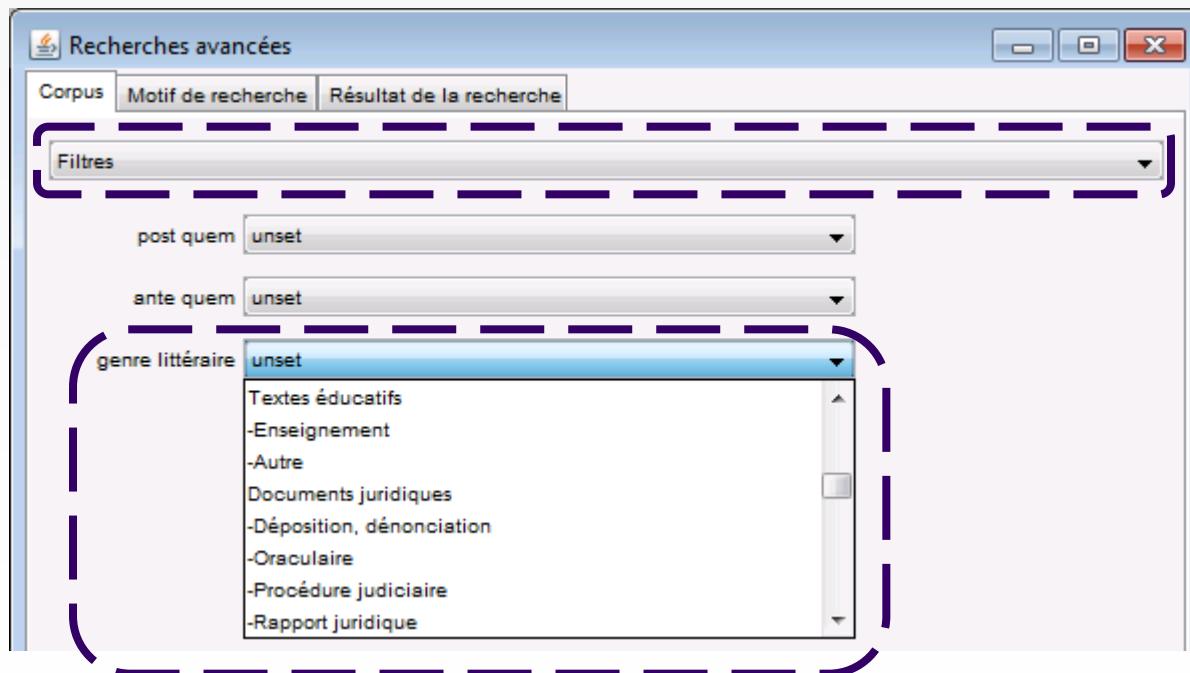
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3. New avenues for linguistic research

Introduction



Description of the SearchEngine



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3. New avenues for linguistic research



Introduction

Description of the SearchEngine

- Defining the corpus
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- Queries build step by step



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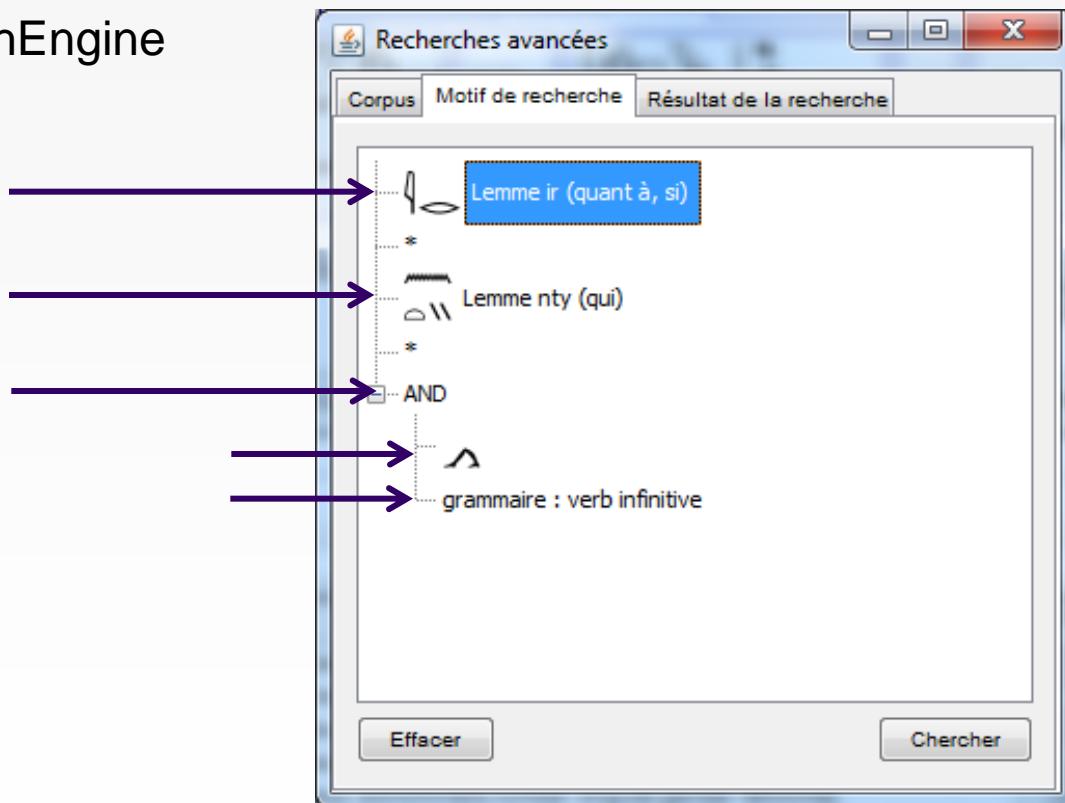


3. New avenues for linguistic research



Introduction

Description of the SearchEngine



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3. New avenues for linguistic research



Introduction

Description of the SearchEngine

- Defining the corpus
 - Whole corpus
 - Sub-corpora (filters on the metadata about genres, date, provenance, writing support, writing system, etc.)
- Queries build step by step
- Results
 - Sorting facilities
 - Visualization and export



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3. New avenues for linguistic research

Introduction



Recherches avancées

1. Publications. An annotated corpus of Late C...

Corpus Motif de recherche Résultat de la recherche

Rechercher : Suivant Précédent

Texte	date	word 0 s...	word 1 s...	word 1 i...	word 2 sp...	word 3 s...	word 3 i...	word 3 in...	word 4 sp...	word 4 le...	word 4 i...
O. IFAO 884 (= O. IFAO 884); id: ...	unknown			iH (boeuf)	iH.w [statu...			Hr (Hr (P1))	default Hr		wxA (cher...
P. Caire CGC 58054 (= P. Caire ...	-Amenho...			nb (tout)	default nb...			r (r (F III))	default r		whi (éviter)
Stèle Caire 34162 (= Décret d'Ho...	-Horemheb			kyky (singe)	kyky.w [st...			Hr (Hr (P1))	default Hr		Smi (s'en ...)
Stèle Caire 34162 (= Décret d'Ho...	-Horemheb			pr-xnr (har...	pr-xnr [sta...			Hr (Hr (P1))	default Hr		Smi (s'en ...)
P. Harris 500 (= Le Prince Prédes...	19e dyna...			pA (le)	pA [numb...			r (r (F III))	default r		pH (attein...
P. Harris 500 (= Le Prince Prédes...	19e dyna...			pA (le)	pA [numb...			r (r (F III))	default r		pH (attein...
Décret de Nauri (= décret de Sét...	-Séthy Ier4			kS (Koush)	kS [status:...			r (r (F III))	default r		Sna (renv...)
Décret de Nauri (= décret de Sét...	-Séthy Ier4			nb (tout)	default nb...			r (vers, p...)	default r		smnnmn (fa...)
Décret de Nauri (= décret de Sét...	-Séthy Ier4			pA (le)	pA [numb...			r (r (F III))	default r		thi (attaqu...)
Kanaïs, temple de Séthy 1er, Wa...	-Séthy Ier9			nb (tout)	default nb...			r (r (F III))	default r		spr (attein...)
Kanaïs, temple de Séthy 1er, Wa...	-Séthy Ier9			nb (tout)	default nb...			r (r (F III))	default r		stkn (laisse...)
Kanaïs, temple de Séthy 1er, Wa...	-Séthy Ier9			pA (le)	pA [numb...			r (r (F III))	default r		thi (attaqu...)
P. Anastasi 8 (= P. Anastasi 8); id: ...	-Ramsès II			wsx (barq...	wsx [statu...			Hr (Hr (P1))	default Hr		Smi (s'en ...)
Qadech, poème (K1) (= Qadech, ...	-Ramsès II			pA (le)	pA [numb...			Hr (Hr (P1))	default Hr		Smi (s'en ...)
Qadech, poème (L1) (= Qadech, ...	-Ramsès II			pA (le)	pA [numb...			Hr (Hr (P1))	default Hr		Smi (s'en ...)
Qadech, poème (L2) (= Qadech, ...	-Ramsès II			pA (le)	pA [numb...			Hr (Hr (P1))	default Hr		Smi (s'en ...)
P. Raïfé-Sallier 3 (= Qadech, po...	-Ramsès II9			AH.t (cha...	AH.wt [sta...			Hr (Hr (P1))	default Hr		Smi (s'en ...)
P. Berlin P.3047 (= P. Berlin P.3...	-Ramsès I...			AH.t (cha...	AH.wt [sta...			r (r (F III))	default r		hAi (desce...)
P. Orbiney (= Les Deux Frères); id: ...	-Séthy II			pA (le)	pA [numb...			pAy.i (m...)	pAy.k [nu...		iwi (venir)

27 matches

Information à exporter Répertoire d'exportation Exporter Export as JSesh



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3. New avenues for linguistic research



Case study 1: Graphemics and argument structure

Verbs of motion in Late Egyptian

- Specific morphological and constructional behavior
 - Excluded from some inflectional patterns, like the so-called perfective, which is limited to transitive verbs (complementary constructions are used instead)
 - Some aspectual oppositions are expressed in a different way if compared with other verbal semantic classes

sw *hr* *ir.t* *f*
he on do\INF It
“he is doing It / he does”

sw *hr* *iy.t*
he on come\INF
“he comes”

sw *m* *iy.t*
he in come\INF
“he is coming”

- A typical narrative construction (“And then he went to …”, lit. “It is going to … what he did”) appears to be compatible only with verbs of motion



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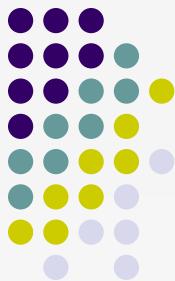
3. New avenues for linguistic research



Case study 1: Graphemics and argument structure

Verbs of motion in Late Egyptian

- Specific morphological and constructional behavior
 - Excluded from some inflectional patterns, like the so-called perfective (complementary constructions are used)
 - Some aspectual oppositions are expressed in a different way with respect to other verbal semantic classes
 - A narrative construction (“And then he went to ...”, lit. “It is going to ... what he did”) appears to be compatible only with such verbs of motion
- Possible research questions
 - Do all the verbs belonging to this category behave the same way?
 - What kinds of variation in terms of argument structure are attested in the material for this semantic class (transitivity alternation, types of prepositional phrase, etc.)?
- Desiderata
 - Need to identify the verbs belonging to the semantic class “verbs of motion”



3. New avenues for linguistic research

Case study 1: Graphemics and argument structure

How can we identify the semantic class “Verbs of Motion” thanks to Ramses?

- Graphemic classifiers:

- What is a graphemic classifier? A graphic morpheme, always appearing at the end of a word, having a categorizing or classifying function; see e.g.:



wdʒ + [BUILDING]

“storehouse”

- Classifiers referring to [MOTION]:



&



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3. New avenues for linguistic research



Case study 1: Graphemics and argument structure

How can we identify the semantic class “Verbs of Motion” thanks to Ramses

- Building the query in the SearchEngine

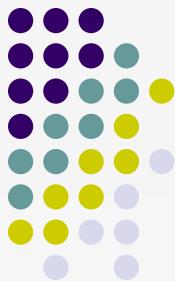


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3. New avenues for linguistic research

Case study 1: Graphemics and argument structure

How can we identify the semantic class “Verbs of Motion” thanks to Ramses

- Building the query in the SearchEngine
- Results of the first query
 - Verbs of motion [MOTION = subject], as e.g.



▪ *pri* “to go out”

- Verbs of transfer, etc. [MOTION = object], as e.g.



▪ *h3b* “to send”

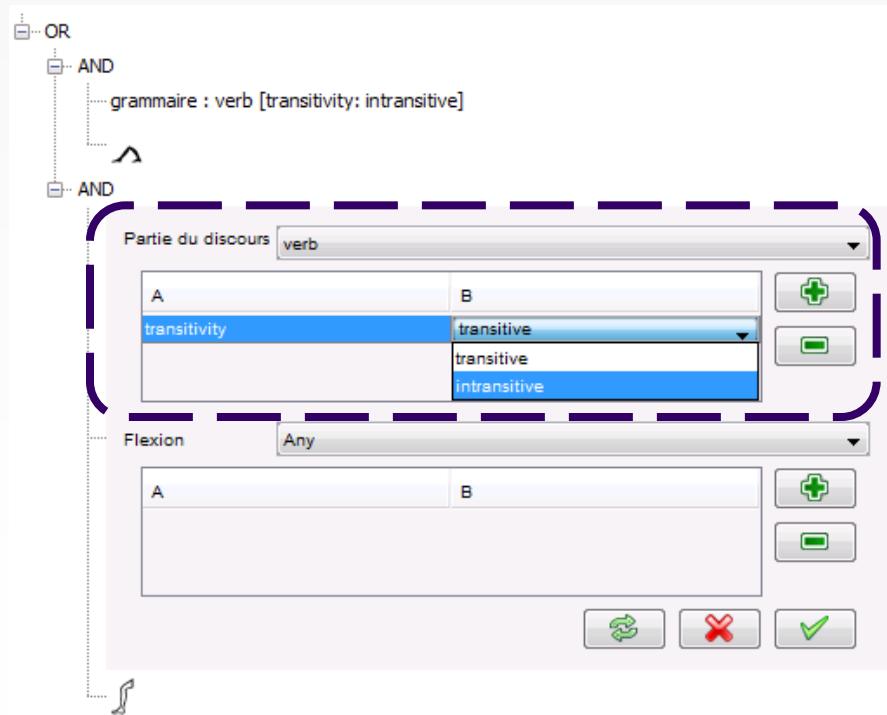
3. New avenues for linguistic research



Case study 1: Graphemics and argument structure

How can we identify the semantic class “Verbs of Motion” thanks to Ramses

- Building the query in the SearchEngine
- Results of the first query
- Refining the query:



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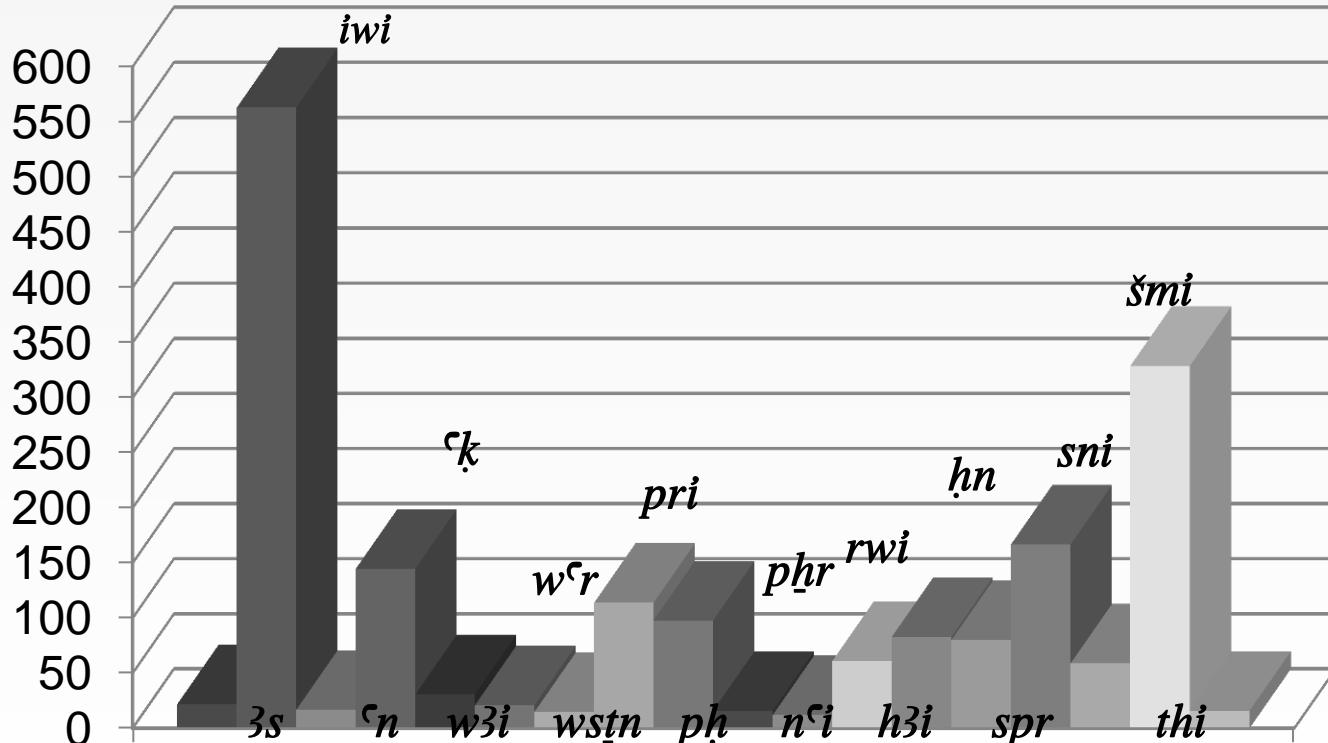
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3. New avenues for linguistic research



Case study 1: Graphemics and argument structure

Results:



- A list of all verbs of motion attested in Late Egyptian is automatically produced, which allows to test the research question raised above

3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns



Status quaestionis

- In L^Eg, there is a shift in the expression of the 3rd pl. suff. pr.
 - From O^Eg onwards down to the 18th dyn., the pronoun is uniformly written *-sn*
 - By the end of the 20th dyn., the change to a new suff. pr. *-w* has been made fully effective
- From a linguistic point of view, it is interesting to study how *-sn* was gradually superseded by *-w*



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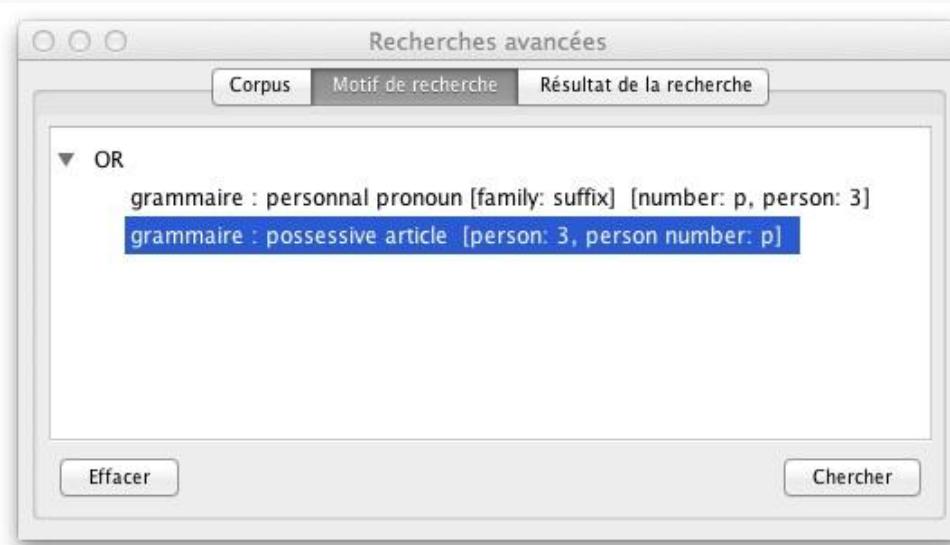
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Case study 2: Variation between 3rd pl. suffix pronouns



Methodology

- Looking for 3rd pl. suff. pronouns **and** poss. article with 3rd pl. possessor



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Case study 2: Variation between 3rd pl. suffix pronouns

Results

Texte	pos	date	word 0 spelling	word 0 lemma	word 0 inflection
Stèle juridique d'Amara...	1	unknown	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Stèle Caire 30770 (= Stè...	9	17e dynastie	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
O. Berlin P 10616+O. C...	v° 1	18e dynastie	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
P. BN 202 + P. Amherst...	P. Amherst 9, 1,x+1	18e dynastie	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
P. BN 202 + P. Amherst...	P. Amherst 9, 1,x+1	18e dynastie	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
O. Berlin P 10614 (= O....	v° 3	18e-19e dynastie	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
T. Vienne 3924 (= T. Vie...	r° 4	18e-19e dynastie	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Stèle Caire CG 34001, JE...	12	-Amosis (lahmès)	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Stèle Caire CG 34001, JE...	17, 9	-Amosis (lahmès)	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Stèle Caire CG 34001, JE...	18, 1	-Amosis (lahmès)	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Stèle Caire CG 34001, JE...	18, 2	-Amosis (lahmès)	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Stèle Caire CG 34001, JE...	18, 8	-Amosis (lahmès)	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Deir el-Bahari, terrasse...	309, 8	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Deir el-Bahari, terrasse...	309, 9	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Deir el-Bahari, terrasse...	309, 10	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Deir el-Bahari, terrasse...	309, 13	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Karnak, entre les 4ème...	356, 15	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Obélisque nord d'Hatch...	362, 12	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Obélisque nord d'Hatch...	362, 14	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Obélisque nord d'Hatch...	364, 12	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Obélisque nord d'Hatch...	364, 13	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Obélisque nord d'Hatch...	364, 14	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Obélisque nord d'Hatch...	364, 15	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Obélisque nord d'Hatch...	365, 2	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]
Obélisque nord d'Hatch...	365, 8	-Hatshepsout	sn (ils (pr. suf.))	sn (ils (pr. suf.))	sn [person: 3,number: p]

- The results can be sorted out according to morphology (-*sn* vs. -*w*) and chronology
- The results are quite numerically important (more than 5500 occ.)
- There is a sharp contrast between the data dating from the beginning of the NK (18th dyn) and ...



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3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns

Results



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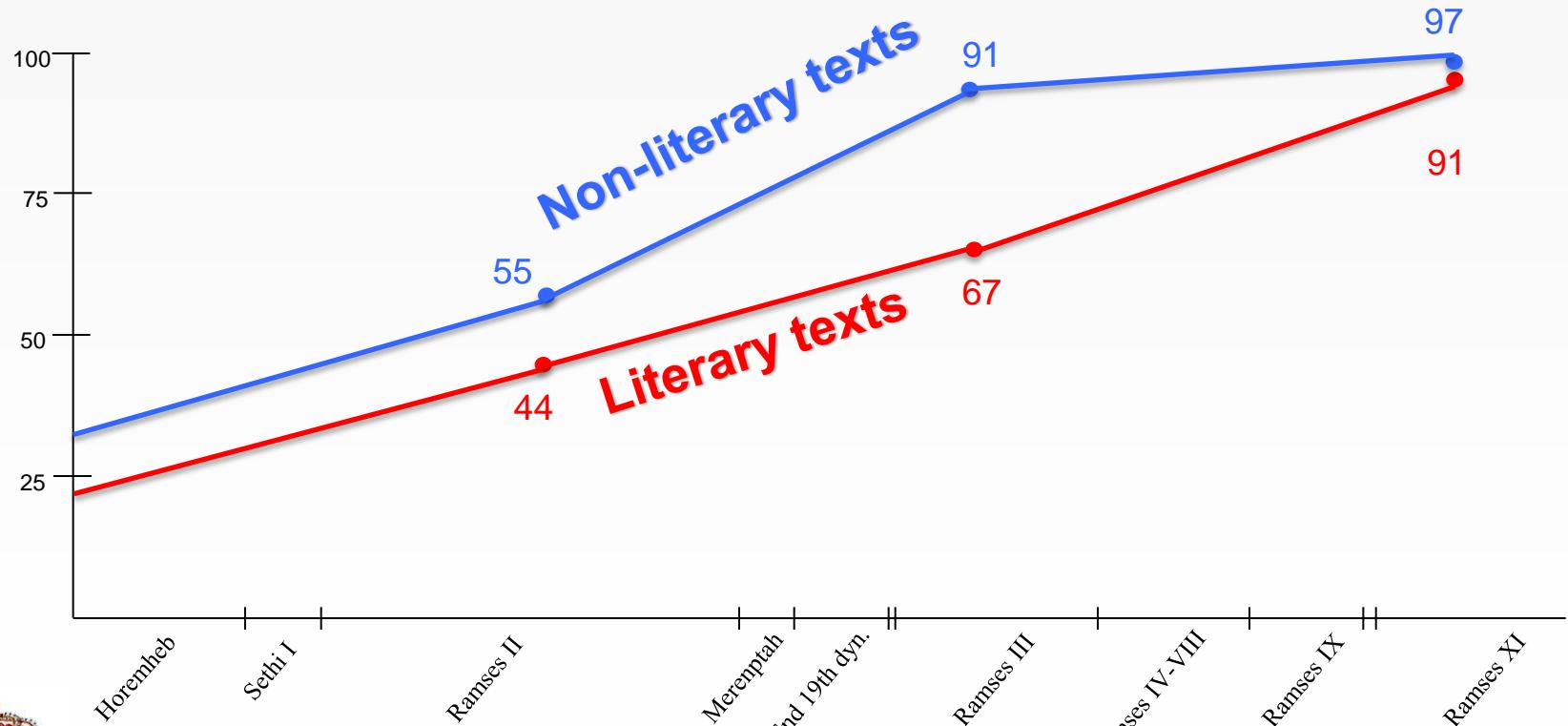
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3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns



The data sorted out by dynasties/reigns and according to text genres



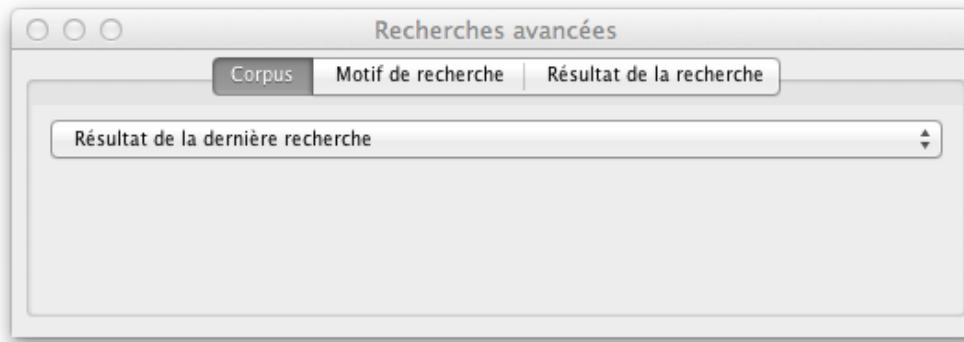
3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns



Methodology

- Looking for 3rd pl. suff. pronouns **and** poss. article with 3rd pl. possessor
- Looking for docs that have both *-sn* and *-w*
 - looking for the 3rd pl. suff. pron. with the form *-sn*
 - taking as research corpus the set of texts that have the suff. pron. *-sn*, and looking for *-w*



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3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns



Recherches avancées

Corpus Motif de recherche Résultat de la recherche

Rechercher : Suivant Précédent

Texte	pos	date	word 0 spelling
Qadech, bulletin ...	102	unset 5	
Qadech, bulletin ...	104	unset 5	
Qadech, bulletin ...	106	unset 5	
P. Turin 2118 (= P...)	17	unset 30	
Karnak, Thoutmos... 868, 15	-Touthmosis III		
Karnak, Thoutmos... 869, 10	-Touthmosis III		
Karnak, Thoutmos... 871, 11	-Touthmosis III		
Karnak, Thoutmos... 873, 10	-Touthmosis III		
Stèle JE 67377 (= S... 2	-Touthmosis III		
Stèle JE 67377 (= S... 14	-Touthmosis III		
Stèle JE 67377 (= S... 15	-Touthmosis III		
Stèle JE 67377 (= S... 15	-Touthmosis III		
Stèle JE 67377 (= S... 16	-Touthmosis III		
Stèle Boston MFA... 1229, 10	-Touthmosis III 47		
Stèle Boston MFA... 1229, 10	-Touthmosis III 47		
Stèle Boston MFA... 1229, 11	-Touthmosis III 47		
Stèle Boston MFA... 1230, 2	-Touthmosis III 47		
Stèle Boston MFA... 1230, 19	-Touthmosis III 47		

1587 matches Information à exporter Répertoire d'exportation

Ramses 20111209 / Stèle JE 67377 (= Stèle du temple de Montou, Armant, de Thoutmosis 3); id: 992

Fichier Menu textes Éditer Insérer Chercher Exportation Bibliographie Statistiques

Recherche d'occurrences simples

Filter: w

Lemme: w (district), w (ils), w (corde), wA (partie de ce), wA (éloigné), wAI (s'éloignent)

Flexion: w (person: 3.number: p)

Graphie: w ||| w 19258, w ||| n 8381, w ||| tw 9108, w ||| tw 50949, w ||| tw 66602

Analysse: Graphie: Lemmes et flexions

Rechercher Dans la base Dans le texte

Texte: Stèle JE 67377 (= Stèle du temple de Montou, Armant, de Thoutmosis 3); id: 992

Position: 2

An example of a text showing both forms of the 3rd pl. suff. **pronoun**

An example of a text showing both forms of the 3rd pl. suff. pronoun



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3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns

The reign of R. III seems to be a turning point

- For instance, pTurin 1880 (aka Turin Strike papyrus) displays the following results:
 - sn* : 18 occ. (mainly with prepositions)
 - w* : 22 occ.

P. TURIN 1880 (= P. Turin 1880); id: 453	v° 7, 4	-Rams...	qe	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	v° 7, 6	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 1, 2	-Rams...	qe	iw (iw (... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 1, 4	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 2, 2	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 2, 4	-Rams...	—	Hr (sur... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 2, 5	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 2, 17	-Rams...	—	in (dit... Form...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 3, 4	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 3, 9	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 3, 10	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 3, 11	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 3, 16	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 3, 16	-Rams...	—	n (à, p... defau...	sn (... sn...
P. Turin 1880 (= P. Turin 1880); id: 453	r° 4, 15	-Rams...	—	n (à, p... defau...	sn (... sn...

3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns



The reign of R. III seems to be a turning point

- For instance, pTurin 1880 (aka Turin Strike papyrus) displays the following results:
 - *-sn* : 18 occ. (mainly with prepositions)
 - *-w* : 22 occ.

At the end of the 20th dyn., *-w* is used almost exclusively in non-literary texts

- For instance, pLéopold II-Amherst, a text that gives the proceedings of a trial involving robbers of royal tombs, displays the following results:
 - *-sn* : only 2 occ. (always with prep. *im*)
 - *-w* : 23 occ.



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3. New avenues for linguistic research



Case study 2: Variation between 3rd pl. suffix pronouns

Methodology

- Looking for 3rd pl. suff. pronouns **and** poss. article with 3rd pl. possessor
- Looking for docs that have both *-sn* and *-w*
- We are thus prompted to look for syntactic environments
 - In L^Eg, the suff. pron. can be used in the following environments:
 - Subject of some inflected forms (perfective, subjunctive, etc.)
 - Subject of some verbal auxiliaries (*iw*, *wn.in*, *mtw*, etc.)
 - Object of infinitives
 - Possessor (with a substantive)
 - After prepositions
 - Component of possessive articles (*p3y.sn*, etc.)
 - In what follows, we restricted the scope to the reign of R. III



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3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns



Two screenshots of a software interface titled "Recherches avancées" (Advanced Searches) are shown, illustrating the search process for 3rd pl. suffix pronouns.

The top screenshot shows the "Filtres" (Filters) section with the following settings:

- post quem: -Ramsès III
- ante quem: -Ramsès III
- genre littéraire: unset

The bottom screenshot shows the "Motif de recherche" (Search motif) section with the following search motif:

▼ OR

- Lemme sn (ils (pr. suf.))
- Lemme w (ils)

Buttons at the bottom of the interface include "Effacer" (Clear) and "Chercher" (Search).



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3. New avenues for linguistic research



Case study 2: Variation between 3rd pl. suffix pronouns

Results sorted out according to the preceding word

Temple de Medinet Habou... 60,12	-Ramsès III		HA (derrière)	default HA		sn (ils (pr. su... sn [person:...
O. DeM 00973 (= O. DeM... 5	-Ramsès III		Hr (sur, au sujet)	default Hr		sn (ils (pr. su... sn [person:...
O. Gardiner 0177 (= O. Ga... r° 2	-Ramsès III		Hr (sur, au sujet)	default Hr		sn (ils (pr. su... sn [person:...
O. Gardiner 0177 (= O. Ga... r° 5	-Ramsès III		Hr (sur, au sujet)	default Hr		sn (ils (pr. su... sn [person:...
P. Lee (= P. Lee); id: 1616 1:5	-Ramsès III		Hr (sur, au sujet)	default Hr		w (ils) w [person:...
P. Lee (= P. Lee); id: 1616 2:2	-Ramsès III		Hr (sur, au sujet)	default Hr		w (ils) w [person:...
Temple de Medinet Habou... 21,15	-Ramsès III		Hr (sur, au sujet)	default Hr		sn (ils (pr. su... sn [person:...
Temple de Medinet Habou... 77,1	-Ramsès III		Hr (sur, au sujet)	default Hr		w (ils) w [person:...
Temple de Medinet Habou... 62,2	-Ramsès III		Hr (sur, au sujet)	default Hr		sn (ils (pr. su... sn [person:...
Temple de Medinet Habou... 63,9	-Ramsès III		Hr (sur, au sujet)	default Hr		w (ils) w [person:...
Temple de Medinet Habou... 69,9	-Ramsès III		Hr (sur, au sujet)	default Hr		w (ils) w [person:...
Temple de Medinet Habou... 69,15	-Ramsès III		Hr (sur, au sujet)	default Hr		w (ils) w [person:...
P. Turin 1880 (= P. Turin 1... v° 6, 5	-Ramsès III 29		Hr (sur, au sujet)	default Hr		w (ils) w [person:...
P. Turin 1880 (= P. Turin 1... r° 2, 4	-Ramsès III 29		Hr (sur, au sujet)	default Hr		sn (ils (pr. su... sn [person:...
Temple de Medinet Habou... 40,13	-Ramsès III		Hr-HA.t-n (de...)	default Hr-H...		sn (ils (pr. su... sn [person:...
Temple de Medinet Habou... 69,3	-Ramsès III		Hr-tp (sur)	default Hr-tp		sn (ils (pr. su... sn [person:...
Temple de Medinet Habou... 70,6	-Ramsès III		Hr-tp (sur)	default Hr-tp		sn (ils (pr. su... sn [person:...
O. Ashmolean Museum 01... r° 4	-Ramsès III		iw (iw (F3))	default iw		w (ils) w [person:...
O. Ashmolean Museum 06... 4	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... r° 3	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... r° 3	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... r° 4	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... r° 5	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... r° 5	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... r° 6	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... r° 7	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... r° 9	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... v° 1	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 05637 (= O. BM... v° 3	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. BM EA 50734 + O. Ash... v° 2	-Ramsès III		iw (iw (séq.))	default iw		w (ils) w [person:...
O. Berlin P 10655 (= O. Be... 4	-Ramsès III		iw (iw (F3))	default iw		w (ils) w [person:...



3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns

We then eliminated literary texts in order to have a homogeneous corpus. We also decided to consider only the material coming from Thebes in order to avoid possible dialectal interferences

The data have been transferred on a Excel sheet for processing

	noun	infinitive	preposition	poss. article	infl. verbs	conj. bases
<i>-sn</i>	0	1	18	1	0	4
<i>-w</i>	20	47	36	10	16	80

3. New avenues for linguistic research

Case study 2: Variation between 3rd pl. suffix pronouns



Zooming in to single texts

<i>-sn</i>	<i>-sn</i> and <i>-w</i>	<i>-w</i>
O. DeM 603 P. Louvre E 27151	O. DeM 973	O. BM 50734+O. Gardiner 99+O. Caire CG 25673
	P. DeM 26 (16) P. Boulaq 10 (8) P. Turin 1880 (29)	O. Ashmolean HO 655 O. BM 5637 O. Berlin P. 10629 O. Caire CG 25553 (12) O. DeM 569 O. DeM 580 O. DeM 592 O. Florence 2621 (21) O. Gardiner 103 O. OIC 110 P. Berlin P. 10496 (21) P. Rifaud A,B,C (30) P. Rollin (30) P. Turin 1875 (30)

This opens up new perspectives in scribal practices



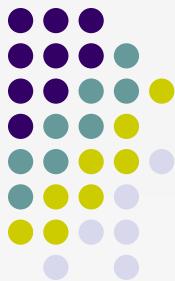
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3. New avenues for linguistic research

Case study 3: sequence of verbal forms expressing orders and injunctions

Status quaestionis

- Two possibilities in Late Egyptian:
 - repeating the verbal form, in this case, the imperative,
 - or using a form that is specialized in expressing sequentiality
- For the last option, there are in L^Eg two patterns:
 - The so-called “Sequential” *iw.f hr sdm*, mainly confined to narrative,
 - The conjunctive *mtw.f sdm*, which is mainly use in discourse

Ex. *i.šm*

i.wn p3 mhr

“go, open the storehouse!” (pOrbiney 3,1-2)

Ex. *i.šm r-hry*

mtw.tn nwy n3y.tn ḥw

“go uphill and fetch your tools” (pTurin 1880, r° 4,19-20)

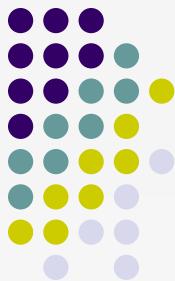


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3. New avenues for linguistic research

Case study 3: sequence of verbal forms expressing orders and injunctions

The image shows two windows of a search interface, likely a corpus search tool. The top window is titled 'Recherches avancées' and shows a search query structure:

- AND:
 - grammaire : verb imperative
- NOT:
 - Lemme Dd (dire)
- *
- Proposition end
- grammaire : verb imperative
- ...

The bottom window is also titled 'Recherches avancées' and shows the results of the search query:

- grammaire : verb imperative
- Proposition end
- Lemme mtw (mtw (conj.))
- grammaire : personnel pronoun [family: suffix] [person: 2]

Methodology

- looking for sequences of imperatives (excluding the verb *dd* “say” as first imperative)
- looking for the sequence imperative + conjunctive (limited to 2nd pers.)



3. New avenues for linguistic research

Case study 3: sequence of verbal forms expressing orders and injunctions

For practical reasons,

- the data are limited to 20th and 21st dynasties
- only non-literary texts have been considered (with the exception of fictional tales)

	Imperative + Imperative	Imperative + Conjunctive
occurrences	86	62
nb of texts	62	51

Starting from this sub corpus, it is possible to test different criteria that can explain the distribution:

- chronology,
- phraseology,
- textual genres,
- scribal traditions, etc.



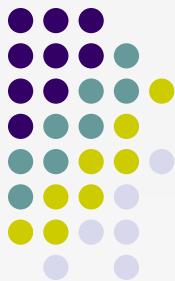
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3. New avenues for linguistic research

Case study 3: sequence of verbal forms expressing orders and injunctions

	Imperative + Imperative	Imperative + Conjunctive
occurrences	86	62
nb of texts	62	51
<i>rdi</i> + <i>rdi</i>	59	9
texts having both constr.		15

rdi + *rdi* : phraseology in letters (well wishes)

Ex. (I say everyday to the gods)

imy n.tn 'nh-wd3-snb 'h' k3 i3w.t 3.t nfr.t

imy n.tn hsw.t knw

imy iw.i

« give them life, prosperity, health, a long life and a beautiful old age
give them numerous honors let me come (back) » (pTurin 1972)



3. New avenues for linguistic research

Case study 3: sequence of verbal forms expressing orders and injunctions

In the *Wenamun*, for instance,

- the sequence imperative + imperative is attested 5 times (1,23; 1,39; 2,7; 2,14; 2,52)
- the sequence imperative + conjunctive is attested 2 times (2,49 and 2,73)

In the second scheme, the conjunctive has a semantic value of consequence (an evolution that is above all perceptible in the first person and will grow in Coptic), whereas the first scheme mainly expresses the sequence of two orders



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መልካም የዕለታዊ የሕዝብ የዕለታዊ የሕዝብ