Cows, Cattle and Chariotry: A case study on classification versus orthography in Ramesside writing

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A case study on classification versus orthography in Ramesside writing

1. Text

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Contents

Preface

At the turn of this century came a new-found fascination for the nature of ancient Egyptian writing. Of particular interest has been how the grammatical elements known as 'determinatives' relate to, and potentially convey, the ancient Egyptians' perception of the world around them. In 2002 Orly Goldwasser published a ground-breaking monograph entitled *Prophets, Lovers and Giraffes: Wor(l)d Classification in Ancient Egypt*[1] presenting her ideas on determinatives, or 'classifiers' as she terms them, their classificatory function, and their relation to cognition. In her work Goldwasser applies a cognitive, linguistic, theoretical framework to ancient Egyptian source material. This is an innovative approach, though not to the contentment of traditional Egyptologists. Unquestionably, however, Goldwasser's work opens up new avenues of research previously unexplored.

The front page of Goldwasser's 'classifier studies' in *Prophets, Lovers and Giraffes* features an elaborate hieratic attestation of the term for 'cattle' (*mnmn.t*) (Fig. 1).[2]

Fig. 1 - Hieratic orthography (*mnmn.t*)

Her underlying thought is that:

> "In this book the term "Egyptian script" refers to hieroglyphs, hieratic and all stages of "cursive hieroglyphs". Hieratic is the cursive version of the highly iconic hieroglyphic script (Gardiner 1957). Some signs in hieratic keep their iconicity to a certain degree while others lose the visual link with the iconic original. Since, as a rule, hieratic is the cursive version of the hieroglyphic script, it should not be differentiated from hieroglyphs proper, at least in theory."[3]

Thus, Goldwasser's source material should include both hieroglyphic and hieratic texts dating from circa 3000 BCE to 1000 BCE.[4] When searching through the monograph one does find references to (Middle Kingdom) hieratic material, but these are few and far between. It is evident that Goldwasser considers the hieroglyphic and hieratic script to be identical – at least when it comes to applying her theory on classification to ancient Egyptian source material. In the past, Goldwasser has been reproached for using a generalising approach lacking chronological or textual nuance.[5] The theoretical framework she presents in *Prophets, Lovers and Giraffes* is certainly fascinating. However, her argument and her methodology is somewhat problematic. The present study aims to venture beyond a strictly lexicographical study, while doing justice to the source material with particular attention to orthographical and lexical distinctions between hieroglyphic and hieratic writing, which is to-date lacking in Goldwasser's work.

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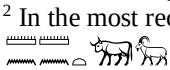
[1] Goldwasser, *Prophets, Lovers and Giraffes: Wor(l)d Classification in Ancient Egypt* (Göttinger Orientforschungen IV. Reihe: Ägypten 38/3; Wiesbaden).

[2] In the most recent text edition of P. Boulaq 17, Maria Michela Luiselli transcribes this attestation as  (Luiselli, Maria Michela 2004. *Der Amun-Re Hymnus des P. Boulaq 17 (P. Kairo CG 58038)* (Kleine Ägyptische Texte 14; Wiesbaden), p. 74 and pl. VI). Meeks, Dimitri 2012. 'La hiérarchie des êtres vivants selon la conception égyptienne', in A. Gasse, F. Servajean and C. Thiers (eds), *Et in Ægypto et ad Ægyptum: Recueil d'études dédiées à Jean-Claude Grenier* (Montpellier), p. 529 more correctly transcribes  .

[3] Goldwasser, Orly 2002. *Prophets, Lovers and Giraffes: Wor(l)d Classification in Ancient Egypt* (Göttinger Orientforschungen IV. Reihe: Ägypten 38/3; Wiesbaden).p. 1 n. 1.

[4] Goldwasser, *Prophets, Lovers and Giraffes*, p. 4.

[5] See among others Meeks, in Gasse *et al.*, *Et in Ægyptum*, pp. 517-546 and McDonald, Angela 2004. Review: Goldwasser, Orly 2002. *Lingua Aegyptia* 12, pp. 235-244.

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CHAPTER 1 *Theoretical framework*

The 'determinative' versus 'classifier' discussion

> "In several of the examples quoted in § 22 the ideogram follows one or more phonograms and ends the word. In cases such as these it is called a determinative, because it appears to determine the meaning of the foregoing sound-signs and to define that meaning in a general way."
>
> (Gardiner 1957, p. 31 §23)

§1.1 Introduction

Language is an omnipresent phenomenon in both modern day and ancient societies. Written language has been intrinsically linked to societies all over the world for millennia. One of the earliest examples is ancient Egyptian. As it is no longer in use today, scholars depend on studying textual material as it has come down to us. Remarkably, unlike for example the Latin alphabet, ancient Egyptian written language is capable of rendering both the Saussurean notions of 'signifier' (i.e. sound pattern) and the 'signified' (i.e. mental concept).[6] De Saussure believes that these two notions are fundamental features of linguistic signs. According to his posthumously published *Cours de linguistique générale* (1916) language is made up of linguistic signs that are each 'an associative relation between two elements' 1) the signified as an item of thought, and 2) the signifier as a sound pattern (or acoustic image) residing in the mind.[7] Recently, this phenomenon, arguably best represented in the ancient Egyptian 'determinative', has again sparked the interest of Egyptologists. Their approach is primarily diachronic since it is generally believed that 'language change explains synchronic language structure'.[8] Thus more general research is favoured over more specific research, because only the former is believed to precede the latter in the advancement of our understanding of ancient Egyptian written language. As a result, current research on determinatives or 'classifiers' is aimed at establishing 1) the phenomenon's '*raison d'être*', and 2) its development over time[9] with a linguistic-theoretical focus.[10] Scholars are encouraged to be cautious when comparing 'texts of the same genre and production', i.e. synchronic source material. Furthermore, "hieratic examples should be treated very carefully after checking the specific reasons that may have caused changes (fused groups of signs, 'easy' conventional hieratic signs, etc.)".[11]

Previously, Anthony Spalinger has touched upon the importance of distinguishing between hieroglyphic and hieratic in 'determinative studies'.[12] He consciously limits the scope of his research in order to give an in depth analysis of the material that "shall indicate the multifaceted nature of the ancient

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[6] See Depuydt, Leo 1994. 'On the nature of the hieroglyphic script', *ZÄS* 121, pp. 17-36, esp. pp. 20-22. For an extensive discussion of among others the term 'concept' as referring to both linguistic signs (i.e. words) and 'the mental content or knowledge components behind them' see Busse, Dietrich 2017. 'Frames as a Model for the Analysis of Concepts, Conceptual Structures, Conceptual Change and Concept Hierarchies', in Pommerening, Tanja and Walter Bisang (eds), *Classification from Antiquity to Modern Times: Sources, methods, and theories from an interdisciplinary perspective* (Berlin and Boston), pp. 281-309.

[7] See Depuydt, *ZÄS* 121, p. 21. See Harris, Roy 1987. *Reading Saussure: A critical commentary on the 'Cours de linguistique générale'* (London).

[8] Grossman, Eitan, and Stéphane Polis 2012. 'Lexical semantics in ancient Egyptian. An introduction', in E. Grossman, S. Polis and J. Winand (eds), *Lexical semantics in ancient Egyptian* (Lingua Aegyptia Studia Monographica 9; Hamburg), p. 12.

[9] Goldwasser, Orly 2006b. 'On the new definition of classifier languages and scripts', *Lingua Aegyptia* 14, p. 476.

[10] See e.g. E. Grossman, S. Polis and J. Winand (eds) 2012. *Lexical Semantics in Ancient Egyptian* (Lingua Aegyptia Studia Monographica 9; Hamburg). For a critical evaluation of this work see Meeks, Dimitri 2015. 'Linguistique et égyptologie: Entre théorisation à priori et contribution à l'étude de la culture égyptienne', *Chronique d'Égypte* 90, pp. 40-67.

[11] Goldwasser, *Lingua Aegyptia* 14, p. 477 n. 35.

[12] See Spalinger, Anthony J. 2008. 'A garland of determinatives', *JEA* 94, p. 139.

mind".[13] He does, however, not distinguish material on the basis of chronology. Halfway through the article, Spalinger does make a noteworthy observation. He finds that "[d]epending upon the type of text (hieratic versus hieroglyphic) (…) specific determinatives could be added or omitted."[14] Consequently, the present study aims to critically assess the potential and validity of the application of Goldwasser's cognitive linguistic 'classifier theory' to ancient Egyptian material, in particular hieroglyphic and hieratic writing from the Ramesside Period. The primary questions asked of the source material are:

a. 'How do determinatives in the hieroglyphic and hieratic corpora relate to one another?';

b. 'How valid is Goldwasser's theory on classification and the (linguistic) classifier system in light of the comparison between both scripts?'.

Indeed, hieratic writing is more subject to pragmatic motives (e.g. graphic conventions and scribal tradition) than hieroglyphic writing. This may influence the selection of determinatives. In the present study I touch upon the question of how valid is the idea that hieratic material represents linguistic thought-categories. This is assumed (by Goldwasser) to be true for hieroglyphic material but in my opinion the full scope of the use of determinatives is - at present - impossible to ascertain because that would require a truly emic approach, meaning that scholars would have an 'insider view', i.e. full understanding of the entire context of the concepts discussed, which can only be provided by an ancient Egyptian.[15]

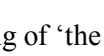
The following paragraphs in CHAPTER 1 give an overview of the relevant typology and the predominant arguments in the 'determinative' versus 'classifier' discussion resulting from Goldwasser's research. Contrary to the one-sided approach to the material by, among others, Goldwasser who generally considers only hieroglyphic material in her work, the author deems the inclusion of more than one script inescapable given the various types in use throughout ancient Egyptian history. Therefore, CHAPTER 2 explicates the source material and the resulting dataset that are the foundation of the present study. The core corpus consists of hieroglyphic and hieratic textual material from the Ramesside Period (c. 1300-1070 BCE). The 'control corpus' spans most of the New Kingdom (c. 1550-1077 BCE) and is drawn from Lesko's *Dictionary of Late Egyptian*.[16] Research involving the core and control corpora focusses on a particular sign, (Gardiner F27)[17] also referred to as [HIDE AND TAIL] classifier by Goldwasser,[18] in ancient Egyptian written language. (Gardiner F27) merits its own chapter in *Prophets, Lovers and Giraffes* since it is indeed a sign that demonstrates *par excellence* the versatility of and nuance conveyed by ancient Egyptian writing, that is as far as we can estimate from an etic, 'outsider', perspective. For the present study, several published texts and corpora yield attestations of (Gardiner F27) that are believed to provide insight into the semantic categories relating to the sign. Hieroglyphic attestations of (Gardiner F27) are drawn from KRI II (Kadesh)[19] and KRI V (Medinet

[13] Spalinger, *JEA* 94, p. 140.
[14] Idem., p. 153.
[15] See Wendrich, Willeke 2013. 'Organizing the world: classification, typology, and taxonomy in the past, present, and future', in E. Frood and A. McDonald (eds), *Decorum and experience: essays in ancient culture for John Baines* (Oxford), pp. 89-90.
[16] Lesko, Leonard H. and Barbara Switalski Lesko
2002 *A Dictionary of Late Egyptian* I (Providence, RI);
2004 *A Dictionary of Late Egyptian* II (Providence, RI). For the sake of consistency a manual crosscheck of the lexemes attested within the corpora (i.e. *Ramses Online*, KRI II and V, P. Harris I) is not attempted. This remains to be done in the future.
[17] Here no distinction is made between (Gardiner F27, with the curved tail) and (Gardiner F28, with the straight tail) since they are interchangeable in hieratic writing. Moreover, Gardiner's *Sign List* (see Gardiner, Alan ^{3}1957. *Egyptian Grammar: Being an Introduction to the Study of Hieroglyphs* (Oxford), p. 464) gives no reason for a distinction between the two signs.
[18] See Goldwasser, *Prophets*, pp. 57-89.
[19] Kitchen, Kenneth A. 1979 *Ramesside Inscriptions: Historical and Biographical* II (Oxford).

Habu).[20] For the hieratic component of the core corpus, literary and documentary[21] textual material compiled in *Ramses Online* (beta)[22] has been invaluable. In April 2018, a search for 'F27' yielded almost 120 results. These constitute the hieratic dataset together with the attestations of  (Gardiner F27) in P. Harris I (P. BM EA 9999)[23] as summarised by Grandet in the *Glossaire*[24] as well hieratic attestations in KRI II.

The final chapter (CHAPTER 3) of the present study offers preliminary conclusions to be drawn from the present study as well as suggestions for future Egyptological research culminating in an alternative approach to the 'determinative' versus 'classifier' discussion. As a result of the present study, the reader will become familiar with the groups of lexemes,[25] or categories, attested with  (Gardiner F27) in the corpus. Thorough examination of the dataset comprising a corpus of hieroglyphic and hieratic source material from the Ramesside Period and taking into account the orthography of both scripts, it is possible to discern trends in the use of determinatives. Moreover, the significance of research that concentrates on a limited time period while being more inclusive regarding different scripts (i.e. the complex nature of ancient Egyptian written language) is established for the first time.

§1.2 Typology

Up to the 21st century certain trends have predominated in Egyptological research in all fields relating to philology. For example Leo Depuydt has proposed 'a comprehensive theoretical model for the study of the hieroglyphic script', highly influenced by Saussurean thought based on a general theory of language with script being (merely) a written representation of language.[26] Hieroglyphs are graphic representations of linguistic signs often termed 'ideogram', being a symbol the meaning of which is dictated by the object or concept it represents. Ancient Egyptian is one of the few written languages ever to exist that represents both the signified (i.e. mental concept) and the signifier (i.e. sound pattern). A good example of the Saussurean duality of signified and signifier in ancient Egyptian written language is *nfr.t*  . Here the sound pattern *nfr.t* refers to 'the beautiful one (feminine gender)' whereas the written  conveys the meaning of 'the beautiful one (namely a female human being)'. [27]

[20] Kitchen, Kenneth A. 1983a. *Ramesside Inscriptions: Historical and Biographical* V (Oxford).

[21] The present study remains subjective and generalising in a sense that e.g. no distinction is made between literary and documentary source material in assessing lexical differentiation in hieroglyphic compared to hieratic in both the core corpus and the control corpus. A distinction between the two in the analysis of the dataset is not made in the present study given the broader scope of the research. It leaves, therefore, something to be done in the future.

[22] *Ramses Online* (beta) < http://ramses.ulg.ac.be/> (accessed 2-4-2018). See aslo Rosmorduc, Serge, Stéphane Polis & Jean Winand. 2009. "Ramses. A new research tool in philology and linguistics", in N. Strudwick (ed.), *Information Technology and Egyptology in 2008. Proceedings of the meeting of the Computer Working Group of the International Association of Egyptologists (Informatique et Égyptologie), Vienna, 8-11 July 2008* (Bible in Technology 2; New Jersey), pp. 155-164.

[23] Published in Erichsen, Wolja 1933. *Papyrus Harris I: Hieroglyphische Transkription* (Bibliotheca Aegyptiaca 5; Brussels) and Grandet, Pierre 1994. *Le Papyrus Harris I (BM 9999)*, 2 vols (Bibliothèque d'étude 109; Cairo).

[24] Grandet, Pierre 1999. *Le papyrus Harris I: Glossaire* (Bibliothèque d'Étude 129; Cairo).

[25] Lincke and Kammerzell define a lexeme as "an ancient Egyptian root as an abstract linguistic sign, i.e. a form-meaning pair the form of which is a consonantal skeleton or its written counterpart (…) while its meaning is that abstract semantic concept that is shared by all instances of the lexeme notwithstanding their respective combination with grammatical morphemes" (Lincke, Eliese-Sophia and Frank Kammerzell 2012. 'Egyptian classifiers at the interface of lexical semantics and pragmatics', in E. Grossman, S. Polis and J. Winand (eds), *Lexical Semantics in Ancient Egyptian* (Lingua Aegyptia Studia Monographica 9; Hamburg), p. 58).

[26] Depuydt, *ZÄS* 121, p. 17. See also Depuydt, Leo 1995. 'Champollion's Ideogram and Saussure's *signe linguistique*', *OrNS* 64, pp. 1-11.

[27] See Depuydt, *ZÄS* 121, p. 34.

On the basis of interpretations of the signs known as 'determinatives' or 'classifiers' in existing scholarship as discussed below, henceforth the term 'determinative' is used to indicate a linguistic sign, grammatically bound to a preceding lexeme, i.e. the basic form (root) of a word,[28] indicating the semantic spectrum to which the preceding lexeme belongs. At present, we deem the term 'determinative' preferable since 'classifier' has such a strong connotation of indicating a classifier system as Goldwasser interprets it. However, when referring to Goldwasser's ideas or arguments the term 'classifier' is used keeping in mind the above-mentioned connotation.

§1.2.1. The traditional 'determinative'

In their 2012 article Goldwasser and Grinevald remark that past Egyptological scholarship has portrayed determinatives as mere 'reading aids' indicating the ends as well as the general idea of the word.[29] Presumably, most Egyptologists and linguists are under the impression that determinatives served "to compensate for the lack of vowels and word divisions in the Egyptian writing system".[30] Moreover, Goldwasser finds that work by Andréas Stauder[31] demonstrates that this idea is prominent in even the latest discussions on ancient Egyptian written language.[32] Stauder, however, clearly acknowledges 'semantic complementation' as an impetus for the development of 'a remarkably complex system of determinatives'.[33] While the term 'determinative' appears in most, if not all, grammars of ancient Egyptian written language, its definition has changed over time and in many ways remains disputed to this day.

The first Egyptologist to consider the nature of determinatives was Jean-François Champollion. Depuydt summarises Champollion's argument in his *Précis du système hiéroglyphique des anciens Égyptiens*[34] saying "determinatives do not directly express speech in the way that ideograms and phonograms do, but only denote the semantic field to which a word belongs".[35] Furthermore, Depuydt notes that Champollion in his *Grammaire égyptienne*[36] anticipates the Saussurean duality of linguistic signs and he distinguishes between synchrony and diachrony in research on ancient Egyptian writing.[37]

Another noteworthy early discussion of the element of ancient Egyptian language known as 'determinative' is by Alan Gardiner in his *Ancient Egyptian Grammar*. Matching the Saussurean view on the function of the sign in language, Gardiner finds that ideograms convey meaning pictorially, often accompanied by sound-signs (i.e. 'phonograms') that give specific information regarding the interpretation of a word in a given context.[38] In many cases an ideogram follows the phonographic components of a word and is then termed a 'determinative' since it "appears to determine the meaning of the foregoing sound-signs and to define that meaning in a general way".[39] Ideographic words can also have determinatives (e.g. sS ). Gardiner notes that few words in the ancient Egyptian lexicon lack

[28] Also described as a 'word in an abstract sense' in Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*,2012, p. 57.
[29] Goldwasser, Orly and Colette Grinevald 2012. 'What are determinatives good for?', in E. Grossman, S. Polis and J. Winand (eds), *Lexical Semantics in Ancient Egyptian* (Hamburg), pp. 17-18.
[30] Idem., p. 18.
[31] Stauder, Andréas 2010. 'The Earliest Egyptian Writing', in C. Woods (ed.), *Visible Language*: *The Invention of Writing* (OIMP 31; Chicago), pp. 137-147.
[32] Goldwasser and Grinevald, in Grossman *et.al.*, *Lexical Semantics*, p. 18.
[33] See Stauder, in C. Woods (ed.), *Visible Language*, p. 147.
[34] Champollion, J.-F. 1824 and 1827-1928. *Précis du système hiéroglyphique des anciens Égyptiens, ou recherches* (Paris).
[35] Depuydt, Leo 1995. 'Champollion's Ideogram and Saussure's *signe linguistique*', *OrNS* 64, p. 5.
[36] Champollion, J.-F. 1836. *Grammaire égyptienne, ou principes généraux de l'écriture sacrée Égyptienne, appliquée à la représentation de la langue parlée* (Paris).
[37] Depuydt, *OrNS* 64, p. 6.
[38] Gardiner, *Grammar*, p. 30 §22.
[39] Idem., p. 31 §23.

determinatives while many have more than one.[40] He uses the term 'generic determinative' for ideograms that determine a wide variety of different words. In his opinion these can 'naturally only express the *kind* of sense', and not the specific meaning, of words, e.g. 'man'  (Gardiner A1), 'tree'  (Gardiner M1), and 'skin, mammal'  (Gardiner F27).[41]

In short, in earliest Egyptological thought determinatives were defined as 'hieroglyphs, specifying the meaning of words in a general way'.[42] They were 'ideograms', lexical units which also refer to the meaning of words. Though hieroglyphs can function both as determinatives and ideograms both have a distinctly different function. Depuydt believes that in the evolution of ancient Egyptian writing both predated the phonogram, with the ideogram having the phonogram derived from it through the rebus principle, i.e. the notion that symbols can represent sound as well as actual objects. The determinative on the other hand, also predating the phonogram, served to 'distinguish words that would otherwise resemble one another in writing'.[43] Ideograms, as well as phonograms, can be distinguished from determinatives in that the former directly represent words as linguistic signs, while the latter does not. Determinatives have a particular function in writing as they indicate 'the ends of words as linguistic units' and they refer to 'the vocalisation patterns' of certain parts of speech such as nouns and verbs.[44] In the past scholars have attempted at establishing a taxonomy of ancient Egyptian, generally hieroglyphic, writing. Recently, Stéphane Polis and Serge Rosmorduc have created a taxonomy of ancient Egyptian written language (Fig. 2). They define the notion of 'classifier' as a non-autonomous graphic signifier expressing content independently from linguistic form.[45] Classifiers appear at the end of words giving 'indications about the semantic classification of a lexeme (i.e. lexeme classification)'.[46] Polis and Rosmorduc employ the term 'classifier' referencing both Goldwasser among others as well as *inter alia* Meeks.[47]

	+ SEMOGRAM		− SEMOGRAM
AUTONOMOUS	Pictogram	Logogram	Phonogram
NON-AUTONOMOUS	Classifier	Radicogram	Interpretant
	− PHONEMOGRAM	+ PHONEMOGRAM	

Fig. 2 - Polis and Rosmorduc's taxonomy of written language

[40] Gardiner, *Grammar*, p. 31 §23.
[41] Ibidem.
[42] See Depuydt, *ZÄS* 121, p. 34.
[43] Ibidem.
[44] See Depuydt, *ZÄS* 121, p. 34.
[45] Polis, Stéphane and Serge Rosmorduc 2015. 'The hieroglyphic sign functions: Suggestions for a revised taxonomy', in H. Amstutz, A. Dorn, M. Müller, M. Ronsdorf and S. Uljas (eds), *Fuzzy Boundaries. Festschrift für Antonio Loprieno* I (Hamburg), p. 157.
[46] Idem., p. 165.
[47] Idem., p. 165 with n. 46.

§1.3 Cognitive linguistics and Egyptology

Since the turn of the century, theory from cognitive linguistics focussing on 'giving an account of language as an integral part of the human cognitive system' has found its way into Egyptology.[48] Cognitive linguistics interprets linguistic phenomena from the perspective of cognitive science and psychology with research questions pertaining to *inter alia* classification and category structure.[49] At the forefront of this research trend is Orly Goldwasser. Her work can be termed 'classifier studies' wherein Goldwasser proposes a reinterpretation of determinatives as 'conceptual classifiers'. Such classifiers supposedly comprise a fully-fledged 'system of graphemic classifiers' reflecting in detail the world organisation of the ancient Egyptians.[50] Goldwasser argues that through analysis of word meanings and interpretations (i.e. lexical semantics)[51] the principles governing the ancient Egyptian cognitive organisation of concepts into groups can be approximated.[52] Paramount in all Goldwasser's research is its aim to lead to insights into and understanding of the 'collective mind of the ancient Egyptian civilization' as well as the interactions between universal cognitive and linguistic phenomena.[53] In this Goldwasser frequently follows cognitive linguistic theory such as the one by Eleanor Rosch summarised by Rune Nyord as:

> "… categories in human natural language tend to be delimited, not by necessary and sufficient criteria, but rather by being organized around experientially salient prototypes regarded as central members of the category in question, while less "good" examples of the category are characterized by varying degrees of deviation from the prototype".[54]

Goldwasser interprets Rosch's view on classifiers as including: 1) the world is a 'perceived world'; 2) there is a 'degree of membership' within a category (best members are prototypes); 3) the hierarchy of categorisation: superordinate term, basic-level terms, subordinate term with a set-inclusion relation between them;[55] 4) categories are built around the prototype and have 'fuzzy edges' (see also Fig. 4).[56]

As an alternative view, Roy Ellen argues that "we have long known that words are not always a perfect indicator of the existence of categories: several words may label the same category, and the same word can be used for quite different concepts. What are often described as 'classifiers' by linguists

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[48] Nyord, Rune 2015. 'Cognitive linguistics', W. Wendrich, J. Dieleman, E. Frood, J. Baines, J. Stauder-Porchet, A. Stauder (eds), *UCLA Encyclopedia of Egyptology* <https://escholarship.org/uc/item/9tf384bh> (accessed 8-3-2018), p. 1.

[49] Ibidem.

[50] See Golwasser, Orly 2006a. 'A comparison between classifier language and classifier script: The case of ancient Egyptian', in G. Goldenberg (ed.), *A Festschrift for Hans Jakob Polotsky* (Jerusalem), p. 36. Cf. also Goldwasser, Orly and Matthias Müller 1999. 'The determinative system as a mirror of world organization', *GM* 170, pp. 49-68.

[51] An Egyptological study in this subfield of cognitive linguistics is e.g. Smoczyński, Wawrzyniec 1999. 'Seeking structure in the lexicon: On some cognitive-functional aspects of determinative assignment', *Lingua Aegyptia* 6, pp. 153-162.

[52] Goldwasser, *Prophets*, p. 1. Very similar ideas feature prominently in publication such as David, Arlette 2000. *De l'infériorité à la perturbation: l'oiseau du "mal" et la catégorisation en Égypte ancienne*. (Göttinger Orientforschungen, 4. Reihe: Ägypten 38/1; Wiesbaden); Shalomi-Hen, Racheli 2006. *The Writing of Gods: The Evolution of Divine Classifiers in the Old Kingdom* (Göttinger Orientforschungen, 4. Reihe: Ägypten 38/4; Wiesbaden); Allon, Niv 2010. 'At the outskirts of a system: Classifiers and word dividers in foreign phrases and texts', *Linguae Aegyptia* 18, pp. 1-17.

[53] Goldwasser and Grinevald 2012, in Grossman *et al.*, *Lexical Semantics*, p. 45.

[54] Nyord, 'Cognitive linguistics', p. 2 after Rosch, Eleanor 1978. 'Principles of categorization', in E. Rosch and B. Lloyd (eds), *Cognition and Categorization* (Hillsdale, N.J.), pp. 28-49.

[55] Contrary to this, Aikhenvald argues that, semantically, classifiers are a not-hierarchically organised system (see Aikhenvald, Alexandra Y. 2000. *Classifiers: A Typology of Noun Categorization Devices* (Oxford), pp. vii, 350).

[56] Goldwasser and Müller, *GM* 170, p. 50.

in both spoken and written languages of various kinds- grammatical entities embedded in utterance or text - are often unreliable indicators of how [auth.: let alone 'why'] people assign - say plants and animals - to groups. [57] Even so, Ellen agrees that "the nomenclature for labelling categories tells us something both about classificatory knowledge and about the attributes which people find important in distinguishing different entities, attributes and phenomena".[58]

§1.3.1 Linguistic classifiers

The question of whether or not ancient Egyptian is a classifier language proves to be relevant to Goldwasser's discussion of it. She interprets ancient Egyptian as a classifier script on the basis of linguistic theory on classifier languages, thereby supposedly allowing for comparison between the two. An example of a classifier language which is supposedly similar to ancient Egyptian is Jakaltek Popti', an Amerindian language of the Mayan family, with noun classifiers (Fig. 3).

Xil	**ix**	malin	**naj**	pel	b'oj	**no'**	cheh
Saw	[WOMAN]	Malin	[MAN]	Pel	with	[ANIMAL]	horse

'Malin saw Pel with the horse'

Fig. 3 - Noun classification in Jakaltek Popti'

Here classifiers precede the referential noun as opposed to following it as is the case in ancient Egyptian.[59] Keith Allan examines similarities between classifiers with nouns in over 50 classifier languages not including ancient Egyptian. Allan defines classifiers on the basis of the assumption that 1) they occur as morphemes in surface structures under specifiable conditions, and 2) they have meaning, in the sense that a classifier denotes some salient perceived or imputed characteristic of the entity to which an associated noun (may) refer(s).[60] Allan's view on classifiers focusses on the idea that classifiers convey meaning in a way that makes them the 'linguistic equivalent to perception'.[61] He believes that different languages could classify human perception in a similar fashion. Classifiers as 'linguistic categories and classes' would in turn reflect a cognitive categorisation of the world.[62] In addition, Aikhenvald finds that classifiers follow semantic parameters which can be universal (e.g. animacy, humanness, physical properties) and culture-specific (e.g. functional properties, social organisation).[63] Of all grammatical categories, both nominal and verbal, classifiers are most easily connected to extra-linguistic phenomena (e.g. physical environment, culture).[64] Classifiers are considered by Aikhenvald to 'reflect principles of human cognition and world perception' as well as give a unique insight into the human ability (or tendency) to 'construct representations of the world and encode them into their languages'.[65]

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[57] Ellen, Roy 2017. 'Tools, agency and the category of living things', in T. Pommerening and W. Bisang (eds), *Classification from Antiquity to Modern Times: Sources, Methods, and Theories from an Interdisciplinary Perspective* (Berlin and Boston), p. 265.
[58] Ibidem. This is an interesting statement to keep in mind in the analysis of the dataset in CHAPTER 2.
[59] See Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, pp. 19, 49-51.
[60] Allan, Keith 1977. 'Classifiers', *Language* 53(2), p. 285.
[61] Idem., p. 308.
[62] Ibidem.
[63] Aikhenvald, *Classifiers*, pp. 271, 307, 350.
[64] Aikhenvald, *Classifiers*, p.340.
[65] Idem., p. 307. This view is most notably shared by George Lakoff (see e.g. Lakoff, George 1987. *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind* (Chicago and London). Cf. also Lakoff, George 1986. 'Classifiers as a reflection of mind', in C. Craig (ed.), *Noun Classes and Categorization. Proceedings of a Symposium on Categorization and Noun Classification, Eugene, Oregon, October 1983* (Amsterdam and Philadelphia), pp. 13-51).

§1.3.2 Egyptological classifiers

The above-mentioned linguistic ideas are adopted and expanded upon by Goldwasser. Since the linguistic theory on classifiers does not include the ancient Egyptian written language, Goldwasser adapts the existing ideas into a theoretical framework applicable to ancient Egyptian hieroglyphic writing. Goldwasser claims that "[c]lassifier language scholars have long recognized the Egyptian system as a classifier system" and subsequently refers to an article by Noel Rude concerning Egyptian graphemic classifiers,[66] which she describes on page 2 of *Prophets* as 'simplistic and immature'.[67]

While other types of classification systems are characterised by 'systematic agreement patterns',[68] a classifier consists of an extra morpheme, the information transferred by which 'should be interpreted together with the word it classifies'.[69] Adding to Goldwasser's theoretical framework is Grinevald who formulates an introduction to the central phenomena associated with classifier systems in oral languages. Grinevald defines a classifier system from a linguistic point of view by stating that "classifiers constitute overt systems of categorization of clear lexical origin used in specific morphosyntactic constructions."[70] Grinevald argues for the interpretation of ancient Egyptian determinatives constituting a system, comparable to oral language classifiers, in that they 'exhibit regularities and obey rules' (relating to frequency and density) .[71] Thus, Goldwasser and Grinevald come to the conclusion that such a rule-governed system of ancient Egyptian determinatives or 'classifiers' can, and should be, systematically compared with the linguistic phenomenon of oral classifiers in any given language around the world.[72]

"The phonological and syntactic systems are coded in ways also used in all oral languages, but, in addition, the Egyptian *writing system* has a language-specific, strictly *visual*, classifier system. Both systems convey different types of information, in a different order, that complete and compete with each other".[73]

According to Eitan Grossman and Stéphane Polis this comparison provides a solid basis for the redefinition of determinatives as classifiers.[74] Goldwasser and Grinevald acknowledge that ancient Egyptian writing is a different medium, it being script not speech.[75] Moreover, certain types of information are transmitted by means of written classifiers and are lacking in oral classifiers.[76] For example, Goldwasser and Grinevald argue that the 'multi-determinative' word in Egyptian is a strong argument in favour of reinterpretation of determinatives. At the same time this is one of the elements that irrefutably distinguishes ancient Egyptian determinatives from oral classifiers.[77] Furthermore, ancient Egyptian classifiers can classify both nouns and verbs and sometimes other parts of speech.[78] This does not occur in any other classifier language.[79] Like Goldwasser, Lincke and Kammerzell also

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[66] See Rude, Noel 1986. 'Graphemic classifiers in Egyptian hieroglyphics and Mesopotamian cuneiform', in C. Craig (ed.), *Noun Classes and Categorization* (Amsterdam and Philadelphia), pp. 133-138.
[67] Goldwasser, *Lingua Aegyptia* 14, p. 473 n. 4.
[68] Such as in the gender system of many modern languages where the gender and number of a noun agrees with its article and adjective.
[69] Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, p. 19.
[70] Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, p. 19.p. 46.
[71] Idem., p. 20.
[72] Idem., p. 21.
[73] Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, p. 42.
[74] Grossman and Polis, in Grossman *et al.*, *Lexical Semantics*, p. 3.
[75] Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, p. 17.
[76] Grossman and Polis, in Grossman *et al.*, *Lexical Semantics*, p. 3.
[77] See Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, p. 43.
[78] See Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 56.
[79] Cf. Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, pp. 46-48. Contradictorily, Goldwasser and Grinevald discuss all unique features of ancient Egyptian written classifiers on pp. 43-44.

believe written Egyptian classifiers to be very similar to classifiers in other languages (see Fig. 3 above).[80]

§1.3.2.1 Goldwasser's 'graphemic classifier'

Earlier this year (2018) Goldwasser began a research project on 'the classification of Semitic loanwords in the Egyptian script' which concisely presents her views on classifiers. The brief description of the project posted on *Academia.edu* demonstrates that at the core of the theoretical framework is the notion that classifiers transfer an additional semantic layer of ancient information from writing to reader. Through this, the host-word to which the classifier is added is assigned to (various) ancient Egyptian semantic categories. Together 'classifiers constitute a linguistically dynamic and highly developed system' mapping the knowledge-organisation of ancient Egyptian culture.[81] Apart from language (and beyond the linguistic signifier), the Egyptian classifier system attests to the existence of knowledge organisation and conceptual structures.[82]

In their contribution to the 2012 volume entitled *Lexical Semantics in Ancient Egyptian* Goldwasser and Grinevald define determinatives as 'mute graphemes' (i.e. unpronounced signs) following almost every word in the Egyptian hieroglyphic script'.[83] Classifiers in the case of ancient Egyptian writing are "an *extra* morpheme, occurring once in a certain construction, carrying information that should be interpreted together with the word it classifies".[84] Goldwasser is convinced that Gardiner's original definition of the determinative "disregards the complex network of additional information provided by the iconic nature of the sign that is activated in this [classifier] role".[85] However, during the evolution of such a system a 'classifier' can lose some or all of its semantic content.[86] This is problematic since it would mean that the supposed classifier system can exist without there being clear proof of it at a certain point in the development of ancient Egyptian written language.

Chantrain concisely summarises views[87] in relation to classifiers in that the Egyptian classification system can be divided into respectively a vertical and a horizontal axis. The vertical axis constitutes taxonomic classification in which classifiers are subdivided into the superordinate level, the basic-level (prototype), and the subordinate level (see Fig. 4). The horizontal axis encompasses meronymic (i.e. membership-based) and metonymic (i.e. relational) associations,[88] these being the principles "according to which classifiers are linked to the concepts expressed by the lexemes they classify".[89]

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[80] Cf. Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 67.

[81] See Goldwasser goes as far as to describe classifiers as "priceless nuggets of emic ancient information" (<https://www.academia.edu/36555270/CLASSIFYING_THE_OTHER_The_Classification_of_Semitic_loanwords_in_the_Egyptian_script_in_New_Kingdom_Egypt_Research_Project_ISF_735_17_> (accessed 30-6-2018)). Cf. Goldwasser, *Prophets*, p. 1.

[82] Goldwasser, Orly 2005 'Where is metaphor? Conceptual metaphor and alternative classification in the hieroglyphic script', *Metaphor and Symbol* 20(2), p. 110.

[83] Cf. Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, pp. 17-18.

[84] Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, p. 19. Presumably, by 'occurring once in a certain construction' they refer to specific determinatives such as (Gardiner F27) instead of determinatives in general, because that negate the existence of multi-determinative expressions.

[85] Goldwasser, *Lingua Aegyptia* 14, p. 474.

[86] Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, p. 19.

[87] Of Goldwasser and Grinevald, and also Lincke, Eliese-Sophia 2011. *Der Prinzipien der Klassifizierung im Altägyptischen* (Göttinger Orientforschungen IV. Reihe: Ägypten 38/6; Wiesbaden), pp. 25-43.

[88] See Goldwasser, in Goldenberg, *Festschrift Polotsky*, p. 32.

[89] See Chantrain, Gaëlle 2014. 'The use of classifiers in the New Kingdom: A global reorganization of the classifiers system?', *Lingua Aegyptia* 22, p. 40.

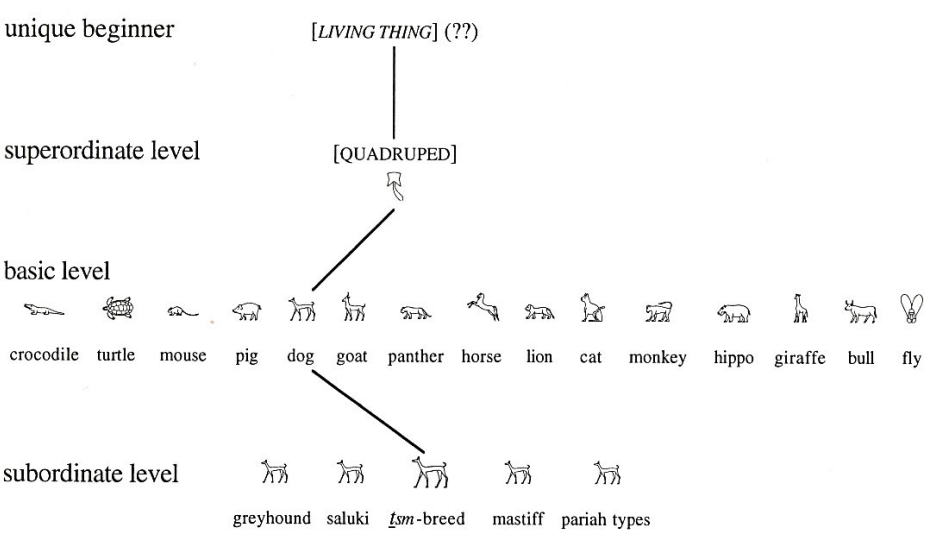


Fig. 4 - Goldwasser's taxonomy of (Gardiner F27)

Indeed, the 'determinative' versus 'classifier' discussion has increasingly become the subject of scholarly debate on the ancient Egyptian writing system. Even though they are pioneering ideas on classification in Egyptological scholarship, Goldwasser's theory has been met with considerable criticism. The most recent criticism of Goldwasser's classifier studies is by Meeks who reproaches Goldwasser for not acknowledging the complexity of her conclusions and the possibilities to nuance them.[90] He criticises Goldwasser's approach on the basis that modern scholars cannot really understand what the ancient Egyptians thought, we can only know what the texts suggest. Determinatives or 'indicateurs sémantiques' can be seen as a complex group reflecting the ancient Egyptian perception of the organisation of the world. The idea, however, that 'classifiers' are a system in its own right in a modern sense is flawed. The hieroglyphic corpus originated, evolved, and expanded in uncertain ways on the basis of empirical choices. Current studies on the topic are lacking an overview of all hieroglyphic signs. Furthermore, studies are based on fonts, typeset signs, standardised transposition of hieroglyphic signs not reflecting the original writing.[91]

§1.3.2.2 Lincke and Kammerzell's 'classifier'

Along the same lines of reasoning as Goldwasser follows, Lincke and Kammerzell find the term 'classifier' a typologically more correct term for the hieroglyphs traditionally called 'determinative'.[92] From Gardiner's definition of 'determinative', as quoted on Page 3 above, Lincke and Kammerzell derive the idea that no hieroglyph is a classifier *per se* because there are no 'sign classes' *per se*.[93] Their 'classifier' includes both phonemic and graphemic phenomena in a broader sense.[94] A classifier can be identified on the basis of its position and function within the spelling of a particular word-form. The term 'classifier' is used by Lincke and Kammerzell "as an abbreviation for 'set of tokens of a hieroglyphic grapheme that are used as a classifier'".[95]

Lincke and Kammerzell's interpretation of 'classifier' is rooted in Kammerzell's typology of sign functions where the classifier is perceived to be '[+meaningful]&[-autonomous]' (Fig. 5). They

[90] Meeks, in Gasse *et al.*, *Et in Ægypto et ad Ægyptum*, p. 518 n. 3.
[91] See Idem., pp. 517-518.
[92] See Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 55.
[93] Idem., p. 60.
[94] Nyord, 'Cognitive linguistics', p. 6.
[95] Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 60.

propose the analysis of classifiers as 'bound but fully-fledged morphemes' of ancient Egyptian writing.[96] This means that classifiers are perceived as "elementary linguistic units consisting of a form and a meaning which do not appear independently of other morphemes",[97] a morpheme being the smallest grammatical unit in language. "Being a classifier is not an inherent quality of a particular hieroglyphic grapheme but rather a sign function fulfilled in a specific distribution". [98]

	[+meaningful]	[–meaningful]
[+autonomous]	**logograms** (inaccurately: "ideograms")	**phonograms** (in the narrower sense)
[–autonomous]	**classifiers** (inaccurately: "determinatives")	**interpretants** ("phonetic complements")[7]
	semograms	phonograms (in the wider sense)

Fig. 5 - Lincke and Kammerzell's taxonomy of written language

Concerning the idea that classifiers are merely reading aids to clarify writing Lincke and Kammerzell argue that such 'disambiguation' was not the driving force behind the development of the ancient Egyptian classifier system nor was it their '*raison d'être*'. While disambiguation is a useful secondary effect, classifiers seem to function as a safety net. Besides syntax and context the classifier makes semantic information explicit in writing otherwise absent in spoken language.[99] Finally, Lincke and Kammerzell acknowledge existing criticism but retain many features of Goldwasser's graphemic classifier.[100]

§1.4 The 'linguistic fallacy'

Depuydt argues that the phenomenon that is the determinative 'may give the impression of writing conveying additional information not found in the spoken language, though this may be a fallacy since words do not occur outside the context of speech'.[101] Such statements provoke discussions on the fundamental nature of language, both written and spoken. In the past (cognitive) linguists have presented interesting ideas concerning classifier languages. However, ancient Egyptian classifiers are not morphological but graphemic,[102] therefore ancient Egyptian does not qualify as a classifier language according to the linguistic definition of scholars such as Allan (see Page 9 above). As a solution to this typological inconsistency, Goldwasser deems the ancient Egyptian language 'a nonclassifier language recorded in a classifier script', i.e. with graphemic instead of morphemic classification, that conveys metalinguistic knowledge through conceptual organisation.[103] The presumed opposition between 'graphemic' classifiers in written language as opposed to something like 'phonetic' classifiers in spoken language is accompanied by ideas concerning a discrepancy between spoken language and script or morpheme and grapheme. This does, however, not take into account the little relevance of the 'substance of a linguistic sign', i.e. whether it is written or spoken, to its being a morpheme such as a classifier.[104]

[96] Grossman Polis, in Grossman *et al.*, *Lexical Semantics*, p. 3.
[97] Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 55.
[98] Ibidem.
[99] See Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 101.
[100] See Idem., p. 60.
[101] Depuydt, *ZÄS* 121, p. 34.
[102] Goldwasser, *Prophets*, p. 2.
[103] Goldwasser, *Metaphor and Symbol* 20(2) p. 99.
[104] Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 60.

The fact that writing can be transformed into speech and vice versa without change or loss of information (i.e. one substance into another) indicates, according to Lincke and Kammerzell, that "the substance of a linguistic sign need not affect its function and its position within the respective system".[105]

Lincke and Kammerzell consider spoken language and writing as two different systems (at least when it comes to ancient Egyptian) which are closely interrelated to one another, though they are not directly interdependent.[106] Lincke and Kammerzell argue that the 'non-equivalence' between ancient Egyptian writing and speech stems from the assumption that writing did not develop as a means of representing speech as its primary function. Rather, writing exists and functions as a tool to represent meaning. According to Lincke and Kammerzell, writing in ancient Egypt developed as a means to convey meaning through strategies already existing in spoken language (double articulation).[107] This is the principle of 'meaningless' phonemes or characters which together 'can be used to convey numerous sorts of information'.[108] Lincke and Goldwasser find that a system of graphic information (i.e. writing) adopted systematic rules from spoken language (grapho-phonemic correspondence). In this way writing developed into a writing system and "achieved the capability to represent more or less the same amount of meanings as Spoken Language".[109] In short, though the writing system developed the capability to convey more and more different layers of meaning, there was never a 'functional equipollence' between writing and speech.[110]

Additionally, Ben Haring postulates that, though ancient Egyptian writing may not have the capability of conveying certain nuances of spoken language (for example matters relating to vocalisation) to the reader, it was capable of representing levels of meaning and even words or concepts not (explicitly) represented in spoken language. Thus, in the case of ancient Egyptian writing the definition of language as 'encoding of (spoken) human language' does not suffice (the so-called 'linguistic fallacy'). Indeed, alphabetic writing is a reduction of communication (speech etc.) to mainly phonetic elements. Ancient Egyptian writing, on the other hand, is capable of rendering the signified directly (by-passing speech).[111]

But what do determinatives classify? Does the 'classifying element' classify lexical elements (e.g. noun or verb) or a 'real world' referent? In ancient Egyptian written language it is thought that there are different types of classifiers. Lincke and Kammerzell find that classifier variations become apparent through systematic description and identification of classifiers in a dichotomy of "classifiers that are assigned according to the intension and the semantic frame of a lexical element – be it a root, a word-form or a lexicalized phrase (*lexical classifiers*) – and classifiers that are chosen according to the actual referent of a lexical element in discourse (*referent classifiers* in *referent* or level-2 *classification*)".[112]

[105] Idem., p. 61.
[106] Idem., p. 62.
[107] Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, pp. 62-63.
[108] Haring, Ben 2018. *From Single Sign to Pseudo-script: An Ancient Egyptian System of Workmen's Identity Marks* (Leiden and Boston), p. 97.
[109] Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 63.
[110] Ibidem.
[111] Haring, *From Single Sign*, p. 98.
[112] Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 105.

	lexeme classification	referent classification
other designations	inherent, level-1, intensional classifier	temporary, level-2, phrase, extensional classifier
assigned to – semiotic entity – part of speech	 lexeme word-forms on the basis of the lexeme	 referent nominal phrases (genuine and derived nouns, bare nouns or nouns with attributes, all kinds of phrases whether nominal, verbal or adverbal in nature that are used like nouns/nominalized)
typical host	verbs and nouns	proper names
determined by	semantic frame of the lexeme	features of the actual object acting as referent in discourse
cotext and/or context required for assignment	–	X
inherent lexical properties	X	–
referent properties	–	X
semantic redundancy	X	–
position within a token	root-final or word-form-final	phrase-final, head-final or after every lexical element of the phrase; after the lexeme classifier(s) if any
obligatoriness (tendency)	increasing over time (from Old to New Kingdom); can be dropped before referent classifier	to be explored[57]

Fig. 6 - Lincke and Kammerzell's two types of classification

The first type discussed by Lincke and Kammerzell (Fig. 6) is relevant to the study on 𓂝 (Gardiner F27) in CHAPTER 2. They term this *lexeme classification* (or level-1 classification) with *lexical classifiers* wherein classifiers are assigned to a lexeme according to inherent features (i.e. features that (proto)typical referents share). In the case of lexical classification the choice of classifier is made independently of context (discourse) and lexeme realisation and classifiers are assigned to 'a lexical element (lexeme, root) according to the semantic frame of the lexeme in question'. *Lexeme classification* is closely linked to lexical semantics, although it does not 'reveal an ancient Egyptian concept of the lexicon'.[113] The dataset analysed in the next chapter examines among others lexeme classification on the basis of attestations of 𓂝 (Gardiner F27) in both hieroglyphic and hieratic writing.

[113] See Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 88.

CHAPTER 2 *Dataset analysis*
The source material and 𓂝 (Gardiner F27)

> "… the nomenclature for labelling categories tells us something both about classificatory knowledge and about the attributes which people find important in distinguishing different entities, attributes and phenomena."
> (Ellen 2017, p. 265)

§2.1 Introduction

As discussed in the previous chapter, recent Egyptological literature is rife with opinions and arguments both in favour of and against the proposed reinterpretation of the lexical element known as 'determinative' as 'classifier'. Any argument, however, is weak without foundation on actual ancient Egyptian source material to (in)validate it. After all, such research is the main tool Egyptologists have to approximate ancient Egyptian culture. Keeping this in mind, the present study is intended primarily as a case study on the determinative 𓂝 (Gardiner F27) and what this single sign can tell us in relation to (lexeme) classification in ancient Egyptian written language as well as the existing ideas on that subject. Determinatives have long been of particular interest to Egyptologists. They are perceived as remarkable features of the ancient Egyptian written language which, with its high degree of iconicity, are capable of defining entire classes of concepts with a single prototypical sign.[114] Determinatives would render the 'signified' directly and there are even categories represented by ones such as 𓂝 (Gardiner F27) without previously existing in the lexicon and/or mind.[115] As an example of this, Goldwasser observes that in Pharaonic ancient Egyptian written language there is no lexical expression of a concept such as 'mammal' or 'quadruped'. There is simply the idea of it being represented in the lexemes attested with 𓂝 (Gardiner F27).[116] Notice that Rosch's linguistic discussion on the categorisation of concepts in nature consciously does not include the [ANIMAL] category due to possible linguistic ambiguities among possible subordinates (e.g. [MAMMAL]).[117]

Since the beginning of the 21st century, interpreting the hieroglyphic script as a classifier script places the Egyptological discussion into the fields of (cognitive) linguistics and psycholinguistics. Here, a fundamental assumption is that "classifiers reflect the way the *world is perceived and understood* by a certain society or group".[118] To Goldwasser the idea of the ancient Egyptian script as a 'classifier system' implies that "words collected under one classifier mirror the *existence of a class or a category in the Egyptian collective mind*".[119] To find out what a deliberately delineated study such as the present one can contribute to Egyptological scholarship on this topic, we must first analyse the dataset of attestations from the selected corpus, beginning with a discussion of determinative under consideration.

§2.1.1 𓂝 (Gardiner F27) or '[HIDE AND TAIL] classifier'

Already in 1836 Champollion, the founder of the discipline of Egyptology, described the sign later known as 𓂝 (Gardiner F27) as "la moitié inférieure d'une peau de bœuf ou de tout autre quadrupède" it being "le déterminatif générique de tous les noms de quadrupèdes à défaut des *déterminatifs*

[114] See Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 71.
[115] Idem., p. 72.
[116] See Goldwasser, *Prophets*, p. 31.
[117] See Rosch *et al.* 1976, 'Basic objects in natural categories', *Cognitive Psychology* 8, p. 388.
[118] Goldwasser, *Lingua Aegyptia* 14, p. 474.
[119] Ibidem. Goldwasser, *Lingua Aegyptia* 14, p. 476 n. 19 briefly acknowledges that hieratic abides by different rules, but she does not elaborate on this statement.

figuratifs".[120] In 2002 Goldwasser dedicated a chapter of *Prophets, Lovers and Giraffes*[121] to examining the inner workings of the category represented by (Gardiner F 27). The so-called [HIDE AND TAIL] classifier is a schematisation of a mammal's skin, presumably a 'cow'[122] or 'leopard'.[123] In Goldwasser's opinion, (Gardiner F27) represent a superordinate category [MAMMAL][124] or [QUADRUPED], in the sense of a natural grouping of creatures.[125] Within the taxonomic category of (Gardiner F27) are included hide, skin, and leather as well as objects made of leather.[126] Goldwasser deems (Gardiner F27) the prototype of the category, including both taxonomic and schematic or metonymic, categorisation of those two primary clusters. This presumed category is defined as a *complex category* or a *formal category*.[127] This means that the super-category marked by (Gardiner F27) looks like a purely formal category, its sub-categories, [QUADRUPED] and [LEATHER], seem to belong to the same superordinate category just because they share the same classifier.[128] Concerning this 'complex category' marked by (Gardiner F27), Lincke and Kammerzell remark:

"Being the iconic rendering of a leopard's hide and tail (cf. Goldwasser 2002: 57-61), it was used on lexical elements like *jnm* 'skin', *bA* 'leopard skin', *mskA* 'leather' and *xn-t* 'hide' during the Old and Middle Kingdoms. Later, it appears frequently in designations of various parts of the chariot and other war equipment in a metonymic *stuff//object* relation (…). In texts from the New Kingdom, we find also regularly on expressions for 'dog, 'cat', 'horse', 'mouse', 'lion' – and sometimes even on 'flea', 'scarab', 'scorpion' (cf. Kammerzell 1999)."[129]

§2.2 Dataset

To come to any credible conclusions about the role of the (Gardiner F27) in hieroglyphic compared to hieratic writing, a well-defined and varied selection of source material is essential. Due to the added value of a clearly delineated corpus (both in time and scope), the core corpus is limited to textual material dated to the Ramesside Period, for the most part between the reigns of Ramses II and Ramses V (c. 1279-1070 BCE). Thus, the core corpus consists of attestations of (Gardiner F27) in *Ramses Online*, *KRI* II and V, and P. Harris I that were studied initially. Later, lexemes with (Gardiner F27) were added on the basis of entries in Lesko's *Dictionary of Late Egyptian* constituting the so-called control corpus. Different from the core corpus, this material dates throughout the New Kingdom and adds greatly to the data from the core corpus (see Appendix VII with all attestations, listed by lexeme, and Appendix VIII in which the lexemes are categorised).[130] The *Wörterbuch* provides guidelines concerning standardised transliteration and translation (see Appendix IX). However, the control corpus

[120] Champollion, Jean-François 1836. *Grammaire égyptienne, ou principes généraux de l'écriture sacrée Égyptienne, appliquée à la représentation de la langue parlée* (Paris), p. 82. Also Goldwasser, in Goldenberg, *Festschrift Polotsky*, p. 19.
[121] Goldwasser, *Prophets*, pp. 57-89.
[122] See Gardiner, *Egyptian Grammar*, p. 464.
[123] See e.g. Goldwasser, *Prophets*, pp. 57-61.
[124] An anachronistic term, cf. McDonald, *Lingua Aegyptia* 12, p. 239 n. 8 who is does not follow this argument.
[125] See Goldwasser, *GM* 170, p. 51.
[126] Goldwasser, *GM* 170, p. 59. Also, McDonald, *Lingua Aegyptia* 12, 243 is not convinced by this interpretation.
[127] Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 76.
[128] Goldwasser, *Prophets*, p. 61.
[129] Lincke and Kammerzell, in Grossman *et al.*, *Lexical Semantics*, p. 79. Unfortunately, the article (Kammerzell, Frank 1999. 'Klassificatoren und Kategorienbildung in der ägyptischen Hieroglyphenschrift', *Spektrum: Informationen aus Forschung und Lehre*(3), pp. 29-34) referred to was only available to me as a PDF consisting of illegible scans.
[130] In fact, determinative studies show much potential when it comes to expending the corpus under consideration.

has not been expanded further to include the *Wörterbuch* given the limited timeframe on which the present study focusses.

For the sake of clarity the material relevant to the present study has been compiled into a database using *Microsoft Access 2010*. Over the course of several months searching through online resources and close reading text editions has yielded a total of 241 attestations of 66 lexemes with 𓂝 (Gardiner F27). Firstly, hieroglyphic material (amounting to 36 attestations of 𓂝 (Gardiner F27) with nineteen different lexemes) was gathered from inscriptions in temple precinct of Medinet Habu, see Kitchen 1983 (transcription) and 2008 (translation), and The Epigraphic Survey 1930-1970 (*editio princeps*). This corpus yields 31 attestations of 𓂝 (Gardiner F27) (see Appendix I). Secondly, hieratic material allowing for a comparison between hieratic and hieroglyphic orthography was compiled following a search of the *Ramses Online* database (beta version). This search was conducted in April 2018 and yielded 118 attestations of 𓂝 (Gardiner F27) with 33 individual lexemes (see Appendix II), out of 196 texts together amounting to 65.195 searchable lemmas within the database. The present study benefits immensely from the available online resources such as *Ramses Online*. Nevertheless, such resources prove fallible in that they sometimes exclude entire relevant lexemes attested with 𓂝 (Gardiner F27).[131] Moreover, close reading of text publications of Papyrus Harris I (P. BM EA 9999)[132] yielded 53 attestations of 𓂝 (Gardiner F27) (see Appendix III). Thirdly, close reading of text publications of the 'Battle of Kadesh' narrative (more specifically the section known as the 'Poem') yielded 39 attestations of 𓂝 (Gardiner F27) (see Appendix IV). This textual tradition can be subdivided into:
- hieroglyphic inscriptions in Kitchen 1979 (transcription) and 1999 (translation), yielding just five attestations of 𓂝 (Gardiner F27) (once in *tꜣ-n.t-ḥtr* 'chariotry' and four times in *ṯryn* 'armour');
- hieratic copies in Papyrus Chester Beatty III (Gardiner 1935); Papyrus Raifé and Papyrus Sallier III (Spalinger 2002).[133]

§2.2.1 Lexemes attested in the core corpus

This paragraph presents (observations on) the attestations of 𓂝 (Gardiner F27), as drawn from *KRI* V, *Ramses Online*, P. Harris I, and *KRI* II, on the basis of the lexemes they accompany. Appendices 1 (*KRI* V Medinet Habu), 2 (*Ramses Online*), 3 (P. Harris I), and 4 (*KRI* II Kadesh) contain the lexemes with 𓂝 (Gardiner F27) attested within the core corpus of the present study. The respective tables are divided into three columns containing, from left to right, a number reference number for each lexeme (consisting of the number of the appendix and the order of the lexemes within the appendix, e. 'III' for Appendix III and '.5' for the fifth lexeme in that appendix); a transliteration and translation of the respective lexeme based on the *Wörterbuch*; a transcription of each recorded attestation of a given lexeme from the respective text publication; a reference to the date and the source of the respective attestation. In counting individual lexemes, ones attested in personal names containing the same lexeme[134] and constitute one, e.g. *ꜣby* and *pꜣ-ꜣbw-nḫt*; *ỉw*, *pꜣ-ỉw*, and *sn-pꜣ-ỉw*; *tꜣ-mỉ.t* and *mỉ.t-šrỉ.t*. Furthermore,

[131] My thanks go to Ben Haring for pointing out that the word DAr.t 'scorpion' (cf. *Wb* V, p. 526) does not occur when searching *Ramses Online* for 𓂝 (Gardiner F27) though examples are attested on ostraca from Deir el-Medina and thus the lexeme should appear in the search.
[132] See Erichsen, *Papyrus Harris I* (transcription); Grandet, *Papyrus Harris I* (1994) and *Glossaire* (1999) (translation and commentary).
[133] *KRI* II as a source is particularly interesting because it facilitates direct comparison between hieratic and hieroglyphic attestations of 𓂝 (Gardiner F27). This venture is not undertaken in the present study, see §3.3 Future research.
[134] With the addition of an article (e.g. pA or tA) or an adjective (e.g. Sri 'small').

lexemes and variants or derivatives are paired e.g. *ꜥꜣ* and *ꜥꜣ.t*; mAi and *mꜣiw-rs*; *ḥrs* and *ḥrs.t*; and *ḫtr*, (*tꜣ-*)*n.t-ḫtr*, and *tꜣ-n.t-ḫtr*.

Appendix V shows which lexemes as attested with 𓌙 (Gardiner F27) in the hieroglyphic core corpus as opposed to the hieratic core corpus. Clearly, the hieratic corpus includes a much greater number and variety of lexemes attested with 𓌙 (Gardiner F27). Fourteen different lexemes are attested with 𓌙 (Gardiner F27) in the hieroglyphic core corpus, eight of which are exclusive to hieroglyphic writing as represented in the present study (denoted below in **bold**). The ones attested in the hieroglyphic core corpus are:

1. *ỉꜣw.t* - 'animals, cattle and game';
2. ***ỉꜣd.t*** - type of field;
3. ***ỉspt*** - 'quiver for arrows';
4. ***ỉd.t/ḥm.t*** - 'cow; female animal';
5. *ꜥꜣ* - 'donkey';
6. *ꜥnḫ* - 'billy-goat';
7. ***bḥs.t*** - 'female calf';
8. ***ngꜣw*** - 'long-horned cattle';
9a. ***ḥrs*** - type of bovine;
9b. ***ḥrs.t*** - type of bovine (fem.);
10. *ḫtr* - 'tax';
11. (*tꜣ-*)*n.t-ḫtr* - 'chariotry';
12. ***sỉ*** - 'sheep';
13. ***kꜣ*** - 'bull';
14. *ṯryn* - 'armour';
15a. *ḏr* - 'male calf';
15b. *ḏr.t* - 'small calf'.

This shows that in the dataset hieroglyphic attestations of 𓌙 (Gardiner F27) can be found with lexemes relating to animals (1.; 4.; 5; 6.; 7.; 8.; 9a-b; 11.; 12; 13.; 14.; 15a-b); objects made from animal material (3.; 14.); words relating to animals (2.); and miscellaneous (10.) (see also Appendix VI).

The hieratic core corpus features 42 different lexemes with 𓌙 (Gardiner F27), 36 of which are exclusive to this corpus (see e.g. the column 'Hieratic lexemes' in Appendix VI). Only six lexemes (*ỉꜣw.t* - 'animals, cattle and game'; *ꜥꜣ* - 'donkey'; *ꜥnḫ* - 'billy-goat'; *ḫtr* - 'tax'; (*tꜣ-*)*n.t-ḫtr* - 'chariotry'; *ṯryn* - 'armour') are attested with 𓌙 (Gardiner F27) in both the hieroglyphic and the hieratic core corpus demonstrating that there is overlap of the two is relatively sparse and seemingly random.

From the material compiled in Appendix V, both the hieroglyphic material drawn from KRI II and V and the hieratic material drawn from *Ramses Online* and P. Harris I, the lexemes attested with 𓌙 (Gardiner F27) can roughly be categorised into groups (see Appendix VI). In the hieroglyphic core corpus four categories of lexemes can be discerned, namely 1) animals (containing nineteen lexemes), 2) personal names containing animals (nine individual types), 3) (objects made from) animal material (seven in total), 4) words relating to animals (three words having to do with chariotry), and 5) miscellaneous. This last category requires explaining first. These instances are noteworthy here in that they appear to fit less in the overall trend of concepts determined with 𓌙 (Gardiner F27), e.g. animals and (objects made from) animal material. In one example the interpretation of a lexeme is uncertain, namely:

II.7  *ꜥn*;[135] this is a term used by the people of Deir el-Medina to indicate presumably an animal or product made from animal material. Rob Demarée kindly suggested that *ꜥn* is likely an alternative spelling for *iꜥn* 'baboon' (cf. *Wb* I. p. 191).[136]

Of the 'miscellaneous' lexemes, the following are of interest:

II.10  *bꜣby* is a name of a character from the narrative known as the 'Contendings of Horus and Seth'.[137]

II.11  *bḥ-kꜣ* which is the name of a pet dog in P. Abbott; P. BM 10221; TR 03: r° 2:11.

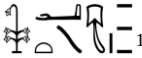
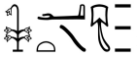
II.13  [138] *mꜣi̯w-rs* is mentioned in *Ramses Online* as a name of a village in the vicinity of Deir el-Medina so it is marked as a toponym in the appendices.

IV.2  [139] *mw.t-ḥr.ti̯* is a name of a horse in the pair of Ramses II in the 'Battle of Kadesh' narrative;

IV.3  [140] *nḫt-m-Wꜣs.t* is a name of a second horse in the pair of Ramses II in the 'Battle of Kadesh' narrative;

II.17  [141] *ḫty.t* of which the translation is uncertain.[142] In T. Eric Peet's publication of P. Mayer A he translates "one *necklace* (?) of fine gold, weighing three *kite*".[143] Guillemette Andreu and Sylvie Cauville suggest a more specific interpretation as an 'end-piece of a collar' (*fermoir de collier*).[144]

II.18  *ḥtr* 'door jambs'[145] does not occur in the *Wörterbuch*[146] with  (Gardiner F27). This attestation points to a mistaken spelling, it being a homonym of Htr 'team of horses/bovine'.[147]

II.26  [148] and  [149] *Šmꜥi̯w*, 'of Upper Egypt'. The determinative stems from its adjectival connection with  and respectively.[150] The *Wörterbuch* translates *ꜣby šmꜥ* as 'leopard'.[151]

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[135] From O. DeM 00051; O. IFAO 00406: r° 5. This is a recurring spelling, see e.g. O. DeM 285; O. IFAO 00062: 7 (Lesko, *Dictionary* I, p. 68).

[136] Lesko, *Dictionary* I, p. 68 suggests an interpretation along the lines of 'to repair, to mend' and features four attestations of *ꜥn* without (Gardiner F27), but this interpretation is improbable.

[137] From LES 04: 3,9 and 12.

[138] From P. BM 10068; TR 06; P. BM 10068 - II: v° 2:3.

[139] From KRI II, 82:4.

[140] From KRI II, 29:10.

[141] From P. Mayer A; TR 01: r° 4:8. Cf. KRI VI, p. 811.11 4.8.

[142] Literally 'throat', cf. *Wb* III, 181. *Ramses Online* suggests 'extremity(?)'.

[143] T. Eric Peet 1920. *The Mayer Papyri A & B: Nos. M. 11162 and M. 11186 of the Free Public Museum, Liverpool* (London), p. 12 4.8.

[144] See Andreu, Guillemette and Sylvie Cauville 1978. 'Vocabulaire absent du *Wörterbuch* (II)', *RdÉ* 30, p. 16.

[145] From P. Mayer A; TR 01: r° 4:6- r° 4:7.

[146] Cf. *Wb* III, 200.13-14.

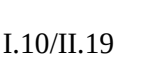
[147] Cf. *Wb* III, 199.11-200.12.

[148] From LES 02: 3,8.

[149] From LES 02: 5,5.

[150] See Gardiner, Alan H. 1932. *Late Egyptian* Stories (Bibliotheca Aegyptiaca I; Brussels), pp. 12 and 14.

[151] *Wb* I, p. 7.12.

An interesting lexeme that features in both the hieroglyphic and the hieratic core corpus is I.10/II.19 In the core corpus both hieroglyphic  [152] and hieratic attestations  [153] of *ḥtr* 'tax'[154] appear. *ḥtr* (tax) is most often attested with (Gardiner Y1).[155] Presumably, this spelling with (Gardiner F27) is a mistake on the basis of homonymy (*ḥtr* 'team of horses/bovines'). The most extensive discussion is by David Warburton[156] who suggests an interpretation as 'assessment' or 'levy'.[157] Orthography involving (Gardiner F27) is not considered.[158]

The 'animals' category is by far the largest category within the both the hieroglyphic and the hieratic core corpus. From this, a certain amount of 'specificity' of the animal lexeme can be distinguished. In the hieroglyphic core corpus there are lexemes referring to more generic terms, e.g. *iꜣw.t* 'animals, cattle and game'; *iḏ.t/ḥm.t* 'cow; female animal'; *ngꜣw* 'long horned cattle'; *ḥrs* 'type of bovine' and *ḥrs.t* 'type of bovine (fem.)'. Also, there are lexemes referring to specific types of animals, e.g. with *kꜣ* 'bull', as well as *ꜥnḫ* 'goat', *sỉ* 'sheep'. In certain instances, a distinction can be made between male and female animals, e.g. *ꜥꜣ* 'donkey', with *ꜥꜣ.t* 'female donkey' only attested in the hieratic core corpus; *bḥs* 'calf', in the hieratic core corpus, and *bḥs.t* 'female calf'.

Also in the hieratic core corpus the 'animals' category is the largest. Besides referring to more generic terms, e.g. *iꜣw.t* 'animals, cattle and game' and the derivative term *tp-n-iꜣw.t* (literally 'head of cattle'); *ꜥw.t* '(wild) cattle', many lexemes attested refer to various specific types of animals, e.g. *ꜣꜥny/iꜥny* 'baboon'; *ꜣby* 'panther'; *ỉyr* 'stag (?);ram (?)'; *ỉw* 'type of dog' and *ṯsm* 'dog; greyhound'; *ꜥꜣ* 'donkey' with *ꜥꜣ.t* 'female donkey', and *sk* 'ass's foal'; *ꜥnḫ* 'goat'; *mꜣỉ* 'lion; large predator' and *rby* 'lioness'; *mꜣ-ḥḏ* 'oryx; white antelope'; *nrꜣw* 'ibex'; *ssm.t* 'horse'; *šꜣỉ* 'pig'; *gḥs* 'gazelle' and *gḥs.t* 'female gazelle'; *db* 'hippopotamus'.

In the hieroglyphic core corpus, the category '(objects made from) animal material' contains lexemes which refer to objects made from animal material, most likely leather in the case of *ỉspt* 'quiver for arrows' and *ṯryn* 'armour'. This category in the hieratic core corpus is broader with a greater variety of individual lexemes, including *inter alia ḫn.t* 'hide; skin', *dḥr* 'hide; leather', and *mskꜣ* 'hide; leather as 'animal material'. Also for example *ỉkm* 'shield', *twt/ṯbw*(*.t*) 'sandals', and *ṯryn* 'armour' fit in as objects made from animal material.

The category 'words relating to animals' incorporates a reference to a place where animals are kept, i.e. *iꜣd.t* 'type of field', as well as a reference to an 'occupation' or more specifically a part of the army which deals with animals, namely (tA-)n.t-Htr 'chariotry'. In the hieratic core corpus the category 'words relating to animals' consists of Htr 'team', (tA-)n.t-Htr 'chariotry', and tA-n.t-Htr 'chariotry'.

A category absent from the hieroglyphic core corpus, while being significant in the hieratic core corpus, is 'personal names containing animals'. Presumably this relates to a lot of material in the latter stems from the workmen's village at Deir el-Medina. Here it was common practice to have lexemes referring to types of animals in one's name. The category contains *pꜣ-ꜣbw-nḫt* 'panther'; *pꜣ-ỉw* 'dog' and *sn-pꜣ-ỉw* 'dog'; *pꜣ-wnš* 'jackal'; *pꜣy-pnw* 'mouse'; *tꜣ-mỉ.t* and *mỉ.t-šrỉ.t* 'female cat'; *pꜣ-sk* 'ass's foal'; *pꜣ-ḳrr* 'frog'; *tꜣ-kỉry.t* 'type of monkey; animal from Nubia.

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[152] From KRI V, 225:8.
[153] From P. Genève D 191; LRL 37: v° 14.
[154] Cf. *Wb* II, pp. 200-201.
[155] Cf. *Wb* III, 201.9-18.
[156] Warburton, David 1997. *State and Economy in Ancient Egypt: Fiscal vocabulary of the New Kingdom* (Fribourg and Göttingen).
[157] Warburton, *State and Economy*, p. 276.
[158] Neither by Warburton nor by e.g. Helck, Wolfgang 1975. 'Abgaben und Steuern', *Lexikon der Ägyptologie* I (Wiesbaden), pp. 3-12.

Overall, it become apparent (see also Appendix V-VI) that while the hieratic core corpus contains a greater variety of individual lexemes attested with 𓏏 (Gardiner F27) while the different categories in which the lexemes can be subdivided are largely, with the exception of personal names, the same.

§2.2.2 Lexemes attested in the control corpus

While Goldwasser's monograph *Prophets, Lovers and Giraffes* is accompanied by an appendix compiled by her PhD-student at the time, Matthias Müller, this appendix - although it contains many attestations of 𓏏 (Gardiner F27) as used by Goldwasser - is not useful to the present study. The attestations are not organised with a chronological focus. Moreover, no clear distinction is made between hieroglyphic and hieratic attestations.[159] However, as mentioned previously, a further addition to the core corpus can be made by means of a control corpus containing material dating throughout the New Kingdom. Therefore, Appendix VII contains lexemes from Lesko's *Dictionary* which add to the corpus of the present study in order to 1) provide further examples of lexemes attested with 𓏏 (Gardiner F27) that are not represented in the core corpus to maximise the amount of source material of the present study, and 2) to enable a comparison between lexemes already featured in the core corpus and attestations of the same lexeme as found in Lesko, with or without 𓏏 (Gardiner F27).[160] Searching Lesko's *Dictionary* resulted in 82 lexemes attested with 𓏏 (Gardiner F27) in total, of which over 50 add to the core corpus in which they not yet feature. The attestation VII.50c *ms-ḥtr* 'giving birth (to twins)' is an exception since the lexeme *ḥtr* 'team of horses/bovines' being already attested in the core corpus. Overlapping lexemes (i.e. examples already attested in the core corpus and now supplemented by the control corpus from Lesko's *Dictionary*), as can be discerned from Appendix VII, are *ꜣᶜᶜny/iᶜn*; *ꜣby*; *iꜣw.t* and *tp-n-iꜣw.t*; *iꜣd.t*; *iyr*; *iw*; *ispt*; *istn*; *ikm*; *id.t/ḥm.t*; *ᶜꜣ* and *ᶜꜣ.t*; *ᶜw.t*; *ᶜnḫ*; *wnš*; *bḥs*(*.t*); *pnw*; *mꜣ-ḥḏ*; *mꜣi*; *mi.t*; *mskꜣ*; *nrꜣw*; *ngꜣw*; *rby*; *ḥty.t*; *ḥtm.t*; *ḥtr* (doorjamb); *ḥtr* (tax); *ḥtr* (team) and *tꜣ-n.t-ḥtr*; *ḫn.t*; *si*; *srpt*; *ssm.t*; *sk*; *šꜣi*; *kꜣ*; *kiry*; *gḥs*(*.t*); *twt/ṯbw*(*.t*); *ṯryn*; *ṯsm*; *db*; *dḥr*; *ḏr*.

On the basis of Appendix VII, the following lexemes can be added to the corpus. Appendix VIII features categories discernible from the hieroglyphic and hieratic control corpus (Lesko) excluding overlapping lexemes already in Appendix VI on categories in the core corpus. The additional lexemes in question are *ib; ibr; inḥw; ishb; idr ᶜnd tp-n-idr; ᶜby; ᶜpšꜣy.t; ᶜmdy; ᶜr; ᶜgsw; bt; btyt; ptr; fnṯ; mw.t; mntḏ; mḥbš; mss; mšy; mtḏi; nḏr; rbš; rhn.t; hnn;hr; ḥꜣity; ḥꜣyry; ḥꜣmr; ḫwš.t; ḫfꜣw; ḫtm.t=ḫṯ.t?; ḫḏrỉ; ḫꜣy; ḫyr; ḫᶜr; ḫnr ᶜnd ṯt-ḫnr; ḫꜣr; ḫᶜw; ḫp.t; sꜣb; sꜣkꜣkꜣ/skskꜣ; sibyn; šsꜣ; šsr; štỉ; šdw; kwšn; krtbỉ; g(ꜣ)w(y); g(ꜣ)f; gḏfḏf; tḥr; ṯkm; dby; dḥr.t*.[161] Certain lexemes attested in the core corpus are not included in Lesko's *Dictionary* but these are not enumerated here since they already appear elsewhere. The categories to which these lexemes can be said to refer are to a great extent similar to the ones in Appendix VI, namely 'animals', '(objects made from) animal material', 'chariotry related terms', 'words relating to animals', and 'miscellaneous'. In Appendix VIII, like in Appendix VI, a staggering number of 65 lexemes attested with 𓏏 (Gardiner F27) belong to the hieratic control corpus compared to a mere nine lexemes in the hieroglyphic control corpus.

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[159] See the appendix by Matthias Müller in Goldwasser, *Prophets*, pp. 13*-46*.

[160] From the attestations in Lesko's *Dictionary* an example is chosen to feature in the appendices. For all attestations of a particular lexeme the reader can refer to the mentioned page in Lesko's *Dictionary*. Moreover, a column containing the total number of attestations is not deemed useful given the arbitrary nature of the ones included in the Leko's *Dictionary*.

[161] These transliterations follow the *Wörterbuch* and not Lesko's *Dictionary*. In some cases, when a lexeme is not included, Lesko's transliterations are adopted.

Some particularly interesting lexemes attested with  (Gardiner F27) are:[162]

1) VII.7 - *inḥw*, potentially a small rodent. This attestation,  ,[163] appears to be 'a lone hapax' (cf. *Gedenkschrift Behrens*, pp. 90-91);[164]

2) VII.16 - *ʿšɜy.t*, a beetle. We have not yet seen an insect attested with  (Gardiner F27) in the core corpus;

3) VII.31 - *mḥbš*, an ivory object. Attestations such as this one could, together with other ones, form the basis for future research by means of the inclusion of material culture in order to ascertain whether leather objects have survived made for example from ivory;

4) VII.37 - *nḏr*, an unknown demon (not attested in the *Wörterbuch* and only once in the TLA (lemma-number 6005390) could prove interesting to a study of lexicography to do with ancient Egyptian religion in light of determinative studies;

5) VII.56 - *ḫʿw* 'razor case (?)'.[165] This lexeme is attested with  (Gardiner F27) as an explicit indicator of material (i.e. leather). It has been linked to *ḫʿḳ* 'to shave'[166] and 'razor'.[167]

Overall, the same applies to the control corpus is that a (vastly) greater variety of lexemes in all categories is attested in the hieratic lexemes compared to the hieroglyphic lexemes. Hieratic scribes appear to have favoured (Gardiner F27) to a greater extent.

[162] I want to thank Elizabeth Bettles for pointing them out to me.
[163] From Cairo JdE 48863.
[164] Cf. Lesko, *Dictionary* I, p. 35.
[165] Cf. Lesko, *Dictionary* I, p. 380.
[166] Cf. *Wb* III, 365.1-3.
[167] Cf. Andreu, Guillemette and Sylvie Cauville 1978. 'Vocabulaire absent du *Wörterbuch (II)*', *RdÉ* 30, p. 17.

CHAPTER 3 *Observations and recommendations*

An alternative approach to the 'determinative' versus 'classifier' discussion

> "… an exact definition of the determinative that goes beyond the traditional concept that determinatives determine the meaning of a word in a general way remains one of the important tasks of the synchronic study of script and language."
> (Depuydt 1994, *ZÄS* 121, p. 34)

The present study, comparing different orthographies, in this case hieroglyphic and hieratic writing, adds a quantitative dimension (i.e. how many attestations of  (Gardiner F27)) and a qualitative dimension (i.e. which lexemes are attested with (Gardiner F27)) to the study of determinative/classifier categories in ancient Egyptian written language. Categorisation is much more nuanced analytical technique than has been previously acknowledged by Egyptological scholarship. There is no intention for robust conclusions to be drawn on the basis of this limited dataset, but the aim is to take small-scale advances toward better understanding categorisation of the Ramesside lexicon and Goldwasser's thoughts on the subject of (cognitive) classification. In short, the present study demonstrates that orthography plays a significantly greater role in classification than has previously been assumed. It is therefore not desirable to take potential cognitive implications as the sole impetus for classification in ancient Egyptian written language. It allows us, to a certain extent, to gain insight into how the ancient Egyptian in the Ramesside Period treated  (Gardiner F27) and its relating groups of lexemes.

To summarise, the first chapter present study examines views in Egyptological scholarship on the traditional determinative and its reinterpretation as a classifier, most notably by Goldwasser. It touches upon subjects such as the Saussurean duality of language and the linguistic fallacy. As shown, a variety of Egyptological approaches to and opinions on the interpretation of determinatives or 'classifiers' as they occur in ancient Egyptian written language. Studying a writing system that is so different from other writing systems in use around the world today raises seemingly unanswerable questions. It is, therefore, not surprising that scholars resort to applying theories to ancient Egyptian material which is, in many ways, illusive and foreign to the modern mind. While such approaches are fundamental to academic research, one should take care when interpreting the outcomes of such endeavours as actual facts. We refer here to Goldwasser's assumption that *the ancient Egyptian writing system* - treated by her almost as a uniform and homogenous entity without distinguishing between different orthographies - reflects how the ancient Egyptian mind organised concepts into groups via 'determinatives', or as she interprets them '(conceptual) classifiers' within an actual classifier system.[168]

Concerning the theories of *inter alia* Goldwasser and Lincke and Kammerzell it can be said that they are to a great extent more applicable to hieroglyphic material than they are to hieratic material, in particular due to the higher degree of iconicity of the former. Overall, we should not dismiss 'classification studies' in Egyptology on the basis that they are innovative or interdisciplinary. One must, however, carefully examine the validity of the resultant theories and methodology. In conclusion to her review of *Prophets, Lovers and Giraffes* McDonald remarks that 'this study suffers as a result of its own ambition'.[169] In my opinion this is an accurate description of Goldwasser's work in general as the Egyptological component is repeatedly subordinated to the (linguistic) theoretical component of

[168] As opposed by Meeks, in Gasse *et al.*, *Et in Ægyptum*, pp. 517-546.
[169] McDonald, *Lingua Aegyptia* 12, p. 242.

'classifier studies'. Goldwasser's theory of an omnipresent cognitive system represented in ancient Egyptian written language should be adapted by the realisation that the categories these represent are greatly influenced by the (pragmatics of the) script in which determinatives such as  (Gardiner F27) appear in addition to the cultural context and mindset of the scribe. By including both hieroglyphic and hieratic textual material, the present study shows the importance of a broader view within a more delineated period in the development of ancient Egyptian written language/culture. In short, the primary way in which the present study contributes to the ongoing Egyptological discussion concerning the reinterpretation of 'determinatives' as 'classifiers' is that it modifies Goldwasser's argument by means of the inclusion of hieratic material in a systematic manner for the first time,[170] thereby advancing existing scholarship on the topic of classification in ancient Egyptian.

In the second chapter, accompanied by Appendices I-IX, individual attestations of and lexemes attested with  (Gardiner F27) are presented and discussed. Lexeme classification on the level of a single determinative,  (Gardiner F27), show regularities in the groups of lexemes, or categories, attested. Both in the core and control corpus these constitute 1) animals; 2) (objects made from) animal material; 3) words relating to animals and chariotry; 4) miscellaneous, the meaning of which can be ascertained to a certain extent. Personal names with animals is an interesting phenomenon which only appears in the hieratic core corpus. In general, the categories in the hieratic core corpus and control corpus are much broader, i.e. they contain more attestations of a greater variety of lexemes.[171] In general, the most striking difference between hieroglyphic and hieratic practice concerning the use of  (Gardiner F27) with certain lexemes is that hieroglyphic attestations generally tend to limit the use of  (Gardiner F27) to lexemes relating to groups of animals (i.e. less or non-specific indications of animals) and (objects made from) animal material.

When it comes to the orthography of specific types of animals, more often than not hieroglyphic scribes write a specific animal determinative. The presume discrepancy between hieroglyphic scribes favouring specific animal determinatives and hieratic scribes preferring  (Gardiner F27) is not treated in depth in the present study. One finds Semitic loanwords such as *ṯryn* 'armour' attested both in hieroglyphic and hieratic with  (Gardiner F27). Further crosscheck within for example KRI II or by broadening the scope of the source material would be interesting. Certain attestations of lexemes in Lesko's *Dictionary* already hinted at a certain phenomenon, namely that while hieroglyphic lexemes relating to animals more often than not write determinatives for specific animals, hieratic lexemes tend to show a preference for (Gardiner F27) as a more generic indicator of 'animalness' or the fact that a certain object is (made from) animal material. Examples of this potential discrepancy are among others: *ꜣby*  ;[172] *i͗ꜣw.t*  ;[173] *i͗dr*  ;[174] *ꜥꜣ*  ;[175] *ꜥw.t*

[170] Note Chantrain, *Lingua Aegytia* 22, pp. 39-59 who is highly influenced by Goldwasser, basing her research on hieratic material. Overall, Chantrain's approach is the wrong way around (from text to cognition back to text). Even if there is a reorganisation observable through analysis of hieratic texts, it is impossible and purely speculative to immediately connect such a phenomenon with cognitive changes, as this is impossible to ascertain by modern scholars. However, the present study does not yield nearly enough material to suggest a cognitive shift as Chantrain claims.

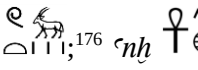
[171] This is influenced by an imbalance of the source material (hieratic is represented more than hieroglyphic). However, this is in line with the aim of the present study, namely to analyse hieratic attestations of  (Gardiner F27) alongside hieroglyphic attestations, something that has not been done before.

[172] From KRI V 26:4.

[173] From KRI I 54 :12-13.

[174] From KRI V, 112:16.

[175] From KRI I, 54:12.

 ;[176] *ʿnḫ*  ;[177] *wnš*  ;[178] *pnw* ;[179] *mɜỉ*  ;[180] *ḥtr*  .[181] At this time, these observations are not meant to serve as a basis for conclusions, but merely as food for thought. Besides crosschecking text publications such as the *Ramesside Inscriptions* series, TLA could also provide additional material. In the course of the present study, the author has come across several 'new' lexemes attested with  (Gardiner F27) which can potentially feature in future studies. Lexemes relating to animals include: *ḥntỉ* 'hedgehog/porcupine' (TLA lemma-no. 107410); *ḫst.t* 'dog' (TLA lemma-no. 121070); *smr* an animal (enemy of the lizard) (TLA lemma-no. 135450); *smsm* 'horse' (TLA lemma-no. 135770); *snbt.t* a small animal (TLA lemma-no. 137110); *snm.tỉ* an animal (TLA lemma-no. 137480); *srw* an animal (TLA lemma-no. 139250); *šɜỉ-ṯɜt* 'boar' (TLA lemma-no. 151440); *štb.t ein Tier (im Zauber)* (TLA lemma-no. 158320); *ḳɜd.yt* an animal (TLA lemma-no. 159660); *knm.t* an animal that fights baboons (TLA lemma-no. 164820); *kk.t* an animal that eats grain with its bill (TLA lemma-no. 165640); *ggɜ* a small animal (TLA lemma-no. 168720); *tɜ* 'dorcas gazelle' (TLA lemma-no. 168920). Some lexemes relating to (objects made from) animal material are: *ḫsɜ* 'leather bag' (TLA lemma-no. 120630); *ḫʿ* 'leather bag?' (TLA lemma-no. 122700); *smỉ*(*.w*) 'whip/lash' (TLA lemma-no. 134930, 134850); *sšd* 'leather pouch' (TLA lemma-no. 145890); *šɜḳ* a leather object (TLA lemma-no. 152070); *šsp.t* 'thong' (TLA lemma-no. 157280); *šsm* 'leather whip' (TLA lemma-no. 157470); *ḳmḳm* 'timpani' (TLA lemma-no. 160850). Miscellaneous lexemes were found to include: *ḫn.tyw* an indication for a foreign people (TLA lemma-no. 123320); *sɜ.w* 'obscurity' (TLA lemma-no. 125870); *knm* 'to wrap (in a robe)' (TLA lemma-no. 164780).

From the present study it becomes apparent that the function of determinatives goes beyond what was believed in the 20th century (reading aid, mere grammatical feature). The dataset gives a clear indication of determinatives in (lexeme) categorisation (see Appendix VI and VII). It is important to take into consideration in future research, as the present study demonstrates, to take orthography into consideration. For example, (Gardiner F27) appears more universally in hieratic with all attested categories, i.e. animals (specific or groups), (objects made from) animal material, words relating to animals and chariotry as well as miscellaneous usage. Presumably, the usage of (Gardiner F27) as shown in the present study is highly influenced by the function of the hieratic script - it being less time-consuming and easier - for scribes to favour (Gardiner F27) above more intricate depictions of specific animals when writing letters etc.. Exceptions are e.g. Semitic loan words like *ṯryn* 'armour' which are generally written with (Gardiner F27). While Gaëlle Chantrain explicitly believes in determinatives such as (Gardiner F27) to demonstrate a certain cognitive shift on the basis of broader categories attested in hieratic in the New Kingdom,[182] I see more pragmatic reasons on the basis of graphic practicalities.

§3.1 Future research

The existing highly theoretical approach to classification in ancient Egyptian written language leaves a lot of room, as well as expectations, for research focussing on the distinctive orthographical

[176] From KRI V, 61:1.
[177] From KRI I, 54:11.
[178] From KRI I, 22:6.
[179] From KRI V, 60:5.
[180] From KRI V, 26:2.
[181] From KRI V, 44:9.
[182] See Chantrain, *Lingua Aegyptia* 22, pp. 39-59.

characteristics of the various types of script known to us from ancient Egypt. Interestingly enough, Goldwasser has recently started a research project entitled 'Classifying the Other: The Classification of Semitic loanwords in the Egyptian script in the New Kingdom'. In the first paragraph of the announcement of the project she states that "[t]he Egyptian script records those words [Semitic loanwords] with an additional emic Egyptian layer of information, their *classifiers*".[183] Noteworthy is the fact that Goldwasser intends to establish a tool for classifier analysis called 'iClassifier'. In the course of the present study it became clear that such a digital resource would be of great help in facilitating research into determinatives on a grander scale. We hope, however, that the gathered information will not be influenced too much by Goldwasser's preconceptions about the nature, use, and behaviour of the remarkable elements of ancient Egyptian written language that determinatives are.

As we have seen, Goldwasser and Grinevald redefine 'determinatives' as 'classifiers' that operate as a 'classifier system' analogous to such systems in oral languages.[184] However, in my opinion, based on the present study, it does not do the material justice to impose modern (linguistic) theory on it on the basis that determinatives form a system as other(spoken) classifier languages can display. In Egyptological research it is important to keep in mind that our studies are founded on secondary interpretations of the arbitrary selection of source material as it has come down to us. Especially concerning something as elusive as 'matters of the mind' caution is advised, as modern-day Egyptologists are and remain far removed from ancient Egyptian culture.

Certain fields of research are not covered by the present study, e.g. a lexicographical study of the interrelation between  (Gardiner F27) and (Gardiner F28) as well as potential differentiation between literary and documentary source material. Moreover, future research could include further focus on crosschecking specific ancient Egyptian corpora meaning that they would focus on the (differences in) usage of particular determinatives. Also the corpus under scrutiny could be expanded to include more, orthographically varied, source material. In any specific study of a determinative more attention could be paid to the context, e.g. damage to the original text.

In conclusion, scholars such as Meeks, who strongly oppose Goldwasser's ideas, are under the impression that (almost) purely theoretical approaches, e.g. to ancient Egyptian classification, do not do justice to the intricacies of ancient Egyptian thought and culture, especially without being preceded by compete and detailed philological analyses.[185] Hereby his implication is that Egyptologists should refrain from it altogether. Nonetheless, I think theory, and even pure Speculation, have the potential to advance and enrich research, albeit substantiated by data from ancient Egypt.

[183] <https://www.academia.edu/36555270/CLASSIFYING_THE_OTHER_The_Classification_of_Semitic_loanwords_in_the_Egyptian_script_in_New_Kingdom_Egypt_Research_Project_ISF_735_17_> (accessed 30-6-2018).
[184] Goldwasser and Grinevald, in Grossman *et al.*, *Lexical Semantics*, p. 17.
[185] See Idem., p. 67.

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Abbreviations

ASAE = Annales du Service des Antiquités de l'Égypte (SAE) (Cairo)
CdÉ = Chronique d'Égypte: Bulletin périodique de la Fondation Égyptologique Reine Élisabeth, Bruxelles (Brussels)
GM = Göttinger Miszellen (Göttingen)
JEA = Journal of Egyptian Archaeology (London)
MDAIK = Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo (DAIK) (Mainz/Cairo/Berlin/Wiesbaden)
OrNS = Orientalia. Commentarii periodici Pontificii instituti biblici, Nova Series (Rome)
RdÉ = Revue d'Égyptologie (Paris)
ZÄS = Zeitschrift für ägyptische Sprache und Altertumskunde (Berlin/Leipzig)

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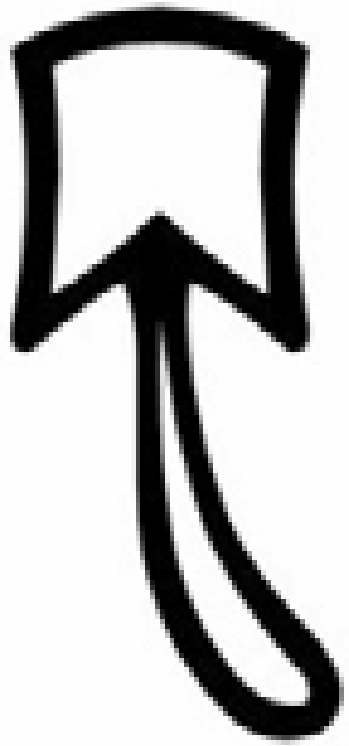
Cows, Cattle and Chariotry

A case study on classification versus orthography in Ramesside writing

2. Appendices



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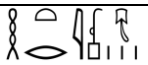
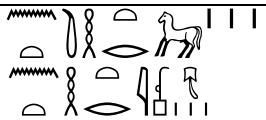
Contents

Appendix I *KRI V*

Close reading of the publication by Kenneth Kitchen (*Ramesside Inscriptions* V)[186] of texts from the locality of the temple precinct of Medinet Habu provide 31 hieroglyphic attestations of 𓂝 (Gardiner F27). The following fourteen lexemes are attested with 𓂝 (Gardiner F27) in this corpus.

#	Transliteration	Transcription	Date/Source
I.1	*ỉɜw.t* (animals, cattle and game)		**Ramses III**/KRI V, 53:14 **Ramses III**/KRI V, 54:2[187] **Ramses III**/KRI V, 54:4 **Ramses III**/KRI V, 54:6
I.2	*ỉɜd.t* (type of field)		**Ramses III**/KRI V, 225:5
I.3	*ỉspt* (quiver for arrows)		**Ramses III**/KRI V, 53:8
I.4	*ỉd.t*/*ḥm.t* (cow; female animal)		**Ramses III**/KRI V, 54:1
I.5	*ꜥɜ* (donkey)		**Ramses III**/KRI V, 54:2 **Ramses III**/KRI V, 54:4 **Ramses III**/KRI V, 54:6 **Ramses III**/KRI V, 53:8
I.6	*ꜥnḫ* (billy-goat)		**Ramses III**/KRI V, 54:6[188]
I.7	*bḥs.t* (female calf)		**Ramses III**/KRI V, 54:1 **Ramses III**/KRI V, 54:1
I.8	*ngɜw* (long-horned cattle)		**Ramses III**/KRI V, 54:1

[186] Specifically pp. 8-226.
[187] With a dublicate in KRI V, 54:3.
[188] With a dublicate in KRI V, 54:7.

I.9a I.9b	*ḥrs* (type of bovine) *ḥrs.t* (type of bovine (fem.))	 	**Ramses III**/KRI V, 54:1 **Ramses III**/KRI V, 54:1
I.10	*ḥtr* (tax)		**Ramses III**/KRI V, 225:8
I.11	(*tꜣ-*)*n.t-ḥtr* (chariotry)	     	**Ramses III**/KRI V, 13:11 **Ramses III**/KRI V, 17:5 **Ramses III**/KRI V, 17:10 **Ramses III**/KRI V, 29:2 **Ramses III**/KRI V, 51:5 **Ramses III**/KRI V, 61:2 **Ramses III**/KRI V, 76:2-3
I.12	*sḏ* (sheep)		**Ramses III**/KRI V, 54:2[189] **Ramses III**/KRI V, 54:4 **Ramses III**/KRI V, 54:6[190]
I.13	*kꜣ* (bull)		**Ramses III**/KRI V, 54:1
I.14a I.14b	*ḏr* (male calf) *ḏr.t* (small calf)		**Ramses III**/KRI V, 54:1 **Ramses III**/KRI V, 54:1

[189] With a dublicate in KRI V, 54:3.
[190] With a dublicate in KRI V, 54:7.

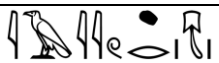
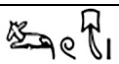
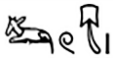
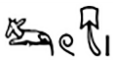
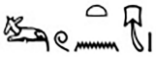
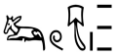
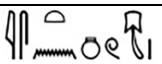
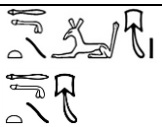
Appendix II *Ramses Online*

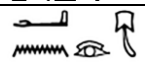
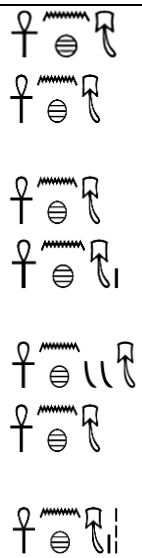
The online resource *Ramses Online* provides 118 hits when a search is made for 'F27'. The following 33 lexemes are attested with  (Gardiner F27) in hieratic in this corpus.

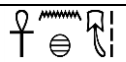
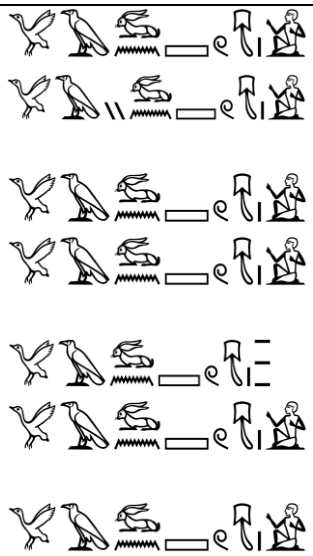
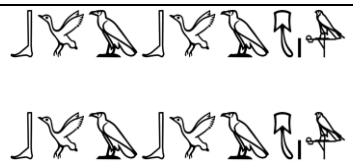
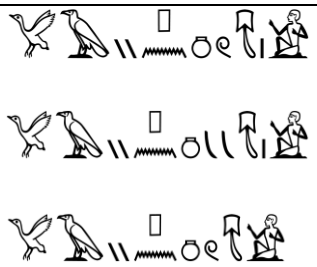
#	Transliteration	Transcription	Date/Source
II.1	*ꜣby* (panther) *pꜣ-ꜣbw-nḫt* (pers. name)[191]	   	**Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 3,8. **Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 5,5. **Ramses V**/P. Chester Beatty 1; P. BM 10681; Horus et Seth (= LESt 04): 9,8. **Ramses IV**/O. DeM 00076; O. IFAO 00337: r° 2.
II.2	*ỉꜣw.t* (animals, cattle and game) *tp-n-ỉꜣw.t* (livestock)	           [192]	**Dyn 19**/ P. Harris 500 (v° 4,1-8,14); P. BM EA 10060 (v° 4,1-8,14); Le Prince Prédestiné (= LESt 01): v° 7,5. **Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 1,2. **Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 1,5. **Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 1,7. **Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 4,4. **Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 5,6. **Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 8,3. **Ramses V**/P. Chester Beatty 1; P. BM 10681; Horus et Seth (= LESt 04): 6,9. **Ramses V**/P. Chester Beatty 1; P. BM 10681; Horus et Seth (= LESt 04): 7,5. **Ramses V**/P. Chester Beatty 1; P. BM 10681; Horus et Seth (= LESt 04): 14,12.

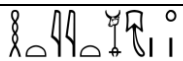
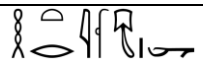
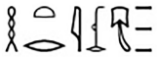
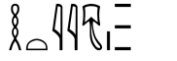
[191] This may be an abbreviated spelling of *ꜣbw* 'elephant' (cf. *Wb* I, 7.15), but given the more common attestation of  (Gardiner F27) in *ꜣby* 'panther' we adhere to this interpretation.

[192] This attestation (from LES 2,8,9) can be found in Lesko, *Dictionary* I, p. 13 while it did not come up in the search of *Ramses Online.*

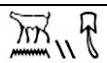
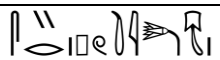
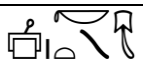
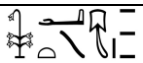
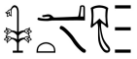
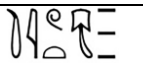
			**Dyn 19**/P. Harris 500 (v° 4,1-8,14); P. BM EA 10060 (v° 4,1-8,14); Le Prince Prédestiné (= LESt 01): v° 5,2-3.
II.3	*ỉyr* (stag (?); ram (?))		**Dyn 21**/P. Moscow 120; Wenamon (= LESt 05): 2,45.
II.4	*ỉw* (type of dog)	        *pз-ỉw* (pers. name)  *sn-pз-ỉw* (pers. name)  	**Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 4,4. **Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 7,6. **Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 7,7. **Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 7,7. **Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 8,8. **Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 8,8. **Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 8,9-v° 8,10. **Sety II**/P. d'Orbiney ; P. BM EA 10183 ; Les Deux Frères (= LESt 02) : 8,8. **Ramses IV**/O. DeM 00094; O. IFAO 00094: r° 3. **Ramses IX**/P. BM 10068; TR 06; P. BM 10068 - I: r° 4:29. **Ramses IX**/P. BM 10068; TR 06; P. BM 10068 - I: r° 6:15.
II.5	*ỉstn* (belt; strap)	 	**Dyn 19**/P. Chester Beatty 2 ; P. BM EA 10682 ; Vérité et Mensonge (= LESt 03) : r° 2,1. **Dyn 19**/P. Chester Beatty 2 ; P. BM EA 10682 ; Vérité et Mensonge (= LESt 03) : r° 10,4.
II.6a	*ꜥз* (donkey)		**Dyn 19**/O. DeM 00063. **Ramses III**/O. DeM 00064; O. IFAO 00123: 1.

II.6b	*ʿɜ.t* (female donkey)		**Ramses III**/O. DeM 00065; O. IFAO 00121: 1. **Ramses III**/O. DeM 00068; O. IFAO 00635: 2. **Ramses III**/ O. DeM 00072; O. IFAO 00645: 2. **Ramses III**/O. DeM 00073; O. IFAO 00338: 3. **Ramses IV**/O. DeM 00070; O. IFAO 00324: 2. **Ramses VI**/ O. DeM 00069; O. IFAO 00075: 1. **Ramses VI**/ O. DeM 00069; O. IFAO 00075: 4. **Ramses VI**/ O. DeM 00069; O. IFAO 00075: 6. **Ramses IV**/O. DeM 00053; O. IFAO 00400: 1. **Ramses IV**/O. DeM 00053; O. IFAO 00400: 3. **Ramses XI**/ P. BM 10326; LRL 09; P. Salt 1821/155 : v° 6. **Ramses XI**/ P. BM 10440; LRLC 3; P. Salt 1821; 9 A. 106; 8 A. 132: 15. **Ramses XI**/ P. Leiden I 370; LRL 05; P. Leiden inv. No. AMS 38b : 6. **Ramses XI**/ P. Mayer A; TR 01: v° 6:4. **Ramses III**/ O. DeM 00073; O. IFAO 00338: 3.
II.7	*ɜᶜᶜny/iᶜny* (baboon (?))		**Dyn 19-20**/O. DeM 00051; O. IFAO 00406: r° 5.
II.8	*ᶜnḫ* (billy-goat)		**Ramses II**/ O. DeM 00050; O. IFAO 00408: r° 6. **Ramses III**/O. DeM 00073; O. IFAO 00338: v° 3. **Ramses III**/O. DeM 00073; O. IFAO 00338: v° 3. **Ramses IV**/O. DeM 00066; O. IFAO 00059: r° 4. **Ramses XI**/P. BM 10052; TR 11: r° 1:20. **Ramses XI**/P. BM 10068; TR 06; P. BM 10068 - II: v° 7:15.

			**Ramses IX**/P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 1:12. **Ramses XI**/P. BM 10068; TR 06; P. BM 10068 - II: v° 7:16.
II.9	*pɜ-wnš* (wolf) (pers. name)		**Ramses IX**/P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 4:16. **Ramses IX**/P. Abbott; P. BM 10221; TR 10; P. Abbott - II: v° B.14. **Ramses XI**/P. BM 10052; TR 11: v° 11:17. **Ramses XI**/P. BM 10052; TR 11: v° 14:15. **Ramses XI**/P. Genève D 191; LRL 37: v° 11. **Ramses XI**/P. Mayer A; TR 01: v° 8:2. **Ramses XI**/P. Mayer A; TR 01: v° 12:15.
II.10	*bɜby* (pers. name)		**Ramses V**/P. Chester Beatty 1; P. BM 10681; Horus et Seth (= LESt 04): 3,9. **Ramses V**/P. Chester Beatty 1; P. BM 10681; Horus et Seth (= LESt 04): 3,12.
II.11	*bḥ-kɜ* (a dog's name)		**Ramses IX**/P. Abbott; P. BM 10221; TR 03: r° 2:11.
II.12	*pɜy-pnw* (mouse) (pers. name)		**Ramses XI**/P. BM 10068; TR 06; P. BM 10068 - II: v° 6:16. **Ramses XI**/P. Mayer A; TR 01: v° 11:15. **Ramses XI**/P. Mayer A; TR 01: v° 13:A2.
II.13	*mɜi̯* (lion; large predator) *mɜi̯w-rs* (toponym)		**Dyn 19**/P. Chester Beatty 2; P. BM EA 10682; Vérité et Mensonge (= LESt 03): r° 2,6. **Dyn 19**/P. Harris 500 (v° 1,1-3,14); P. BM EA 10060 (v° 1,1-3,14); La Prise de Joppé (= LESt 07): v° 1, 12. **Ramses V**/P. Chester Beatty 1; P. BM 10681; Horus et Seth (= LESt 04): 14,7. **Dyn 21**/P. Moscow 120; Wenamon (= LESt 05): 2,34. **Ramses XI**/P. BM 10068; TR 06; P. BM 10068 - II: v° 2:3.

II.14	*tɜ-mi̯.t* (female cat) (pers. name)	   	**Ramses IX**/P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 3:15. **Ramses IX**/P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 4:12. **Ramses IX**/P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 5:15. **Ramses IX**/P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 6:6.
	mi̯.t-šri̯.t (pers. name)		**Ramses IX**/P. Abbott; P. BM 10221; TR 03: r° 4:13.
II.15	*mskɜ* (hide; leather)		**Ramses II**/O. DeM 00097; O. IFAO 00157: v° 3.
II.16	*rby* (lioness)		**Dyn 19**/P. Chester Beatty 2; P. BM EA 10682; Vérité et Mensonge (= LESt 03): r° 2,6-7.
II.17	*ḥty.t* (uncertain)	 [193]	**Ramses XI**/P. Mayer A; TR 01: r° 4:8.
II.18	*ḥtr* (door jambs)		**Ramses XI**/P. Mayer A; TR 01: r° 4:6-r° 4:7.
II.19	*ḥtr* (tax)		**Ramses XI**/P. Genève D 191; LRL 37: v° 14.
II.20a	*ḥtr* (team of horses/bovines)	    	**Dyn 19**/P. Berlin P 3020 + P. Vienne 36; Histoire d'un roi et d'une déesse (= LESt 10): v° 4. **Dyn 19**/P. Harris 500 (v° 1,1-3,14); P. BM EA 10060 (v° 1,1-3,14); La Prise de Joppé (= LESt 07): v° 1, 6. **Dyn 19**/P. Harris 500 (v° 4,1-8,14); P. BM EA 10060 (v° 4,1-8,14); Le Prince Prédestiné (= LESt 01): v° 5,8-v° 5,9. **Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 2,2. **Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 17,5.
II.20b	*tɜ-n.t-ḥtr* (chariotry)		**Sety II**/P. d'Orbiney; P. BM EA 10183; Les Deux Frères (= LESt 02): 11,10.
II.21	*ḫṯ.t* (hyena)		**Ramses XI**/P. BM 10052; TR 11: v° 11:8.

[193] Transcription following Kitchen, KRI VI, p. 811.11 4.8 and the *Wörterbuch* (III,181). T. Eric Peet transcribes  (cf. T. Eric Peet 1920. *The Mayer Papyri A & B: Nos. M. 11162 and M. 11186 of the Free Public Museum, Liverpool* (London), Pl. Page 4 (transcription)).

II.22	*ḫn.t* (hide; skin)	 	**Dyn 19**/P. Chester Beatty 2 ; P. BM EA 10682 ; Vérité et Mensonge (= LESt 03) : r° 7, 2. **Dyn 19**/P. Chester Beatty 2 ; P. BM EA 10682 ; Vérité et Mensonge (= LESt 03) : r° 7,5.
II.23	*srpt* ((lotus) leaf; (lotus) fan)		**Dyn 21**/P. Moscow 120; Wenamon (= LESt 05): 2,45.
II.24	*sk* (ass's foal) *pꜣ-sk* (pers. name)	 	**Ramses XI**/P. BM 10326; LRL 09; P. Salt 1821/155 : v° 15. **Ramses IX**/P. BM 10068; TR 06; P. BM 10068 - I: r° 4:15.
II.25	*šꜣi* (pig)		**Ramses III**/O. DeM 00073; O. IFAO 00338: v° 3.
II.26	*Šmʿiw* (of Upper Egypt)	 	**Sety II**/P. d'Orbiney ; P. BM EA 10183 ; Les Deux Frères (= LESt 02) : 3,8. **Sety II**/P. d'Orbiney ; P. BM EA 10183 ; Les Deux Frères (= LESt 02) : 5,5.
II.27	*pꜣ-ḳrr* (frog) (pers. name)		**Ramses XI**/P. BM 10068; TR 06; P. BM 10068 - II: v° 6:29.
II.28	*tꜣ-kỉry.t* (type of monkey; animal from Nubia) (pers. name)		**Ramses IX**/P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 2:19.
II.29	*gḥs.t* (female gazelle)		**Ramses V**/P. Chester Beatty 1; P. BM 10681; Horus et Seth (= LESt 04): 10,7.
II.30	*twt/ṯbw*(*.t*) (sandals)	    	**Dyn 18**/P. BN 202 + P. Amherst 9 ; Astarté (= LESt 06) : 2, x+19. **Sety II**/P. d'Orbiney ; P. BM EA 10183 ; Les Deux Frères (= LESt 02) : 13,1. **Dyn 19**/P. Chester Beatty 2 ; P. BM EA 10682 ; Vérité et Mensonge (= LESt 03) : r° 7, 2. **Dyn 19**/P. Chester Beatty 2 ; P. BM EA 10682 ; Vérité et Mensonge (= LESt 03) : r° 7,5. **Dyn 19-20**/O. DeM 00051; O. IFAO 00406: r° 7.
II.31	*ṯsm* (dog; greyhound)	 	**Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 4,7.

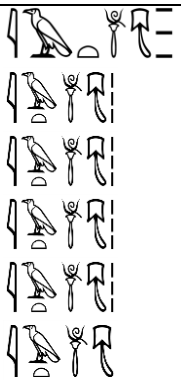
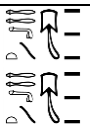
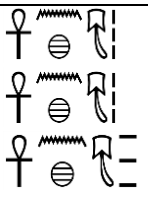
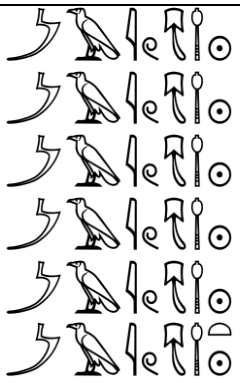
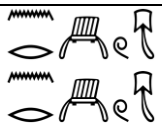
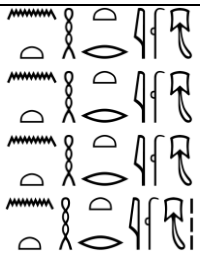
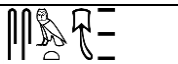
			**Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 4,9. **Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 4,11. **Dyn 19**/P. Harris 500 (v° 4,1-8,14) ; P. BM EA 10060 (v° 4,1-8,14) ; Le Prince Prédestiné (= LESt 01) : v° 5,2. **Ramses IX**/P. Abbott; P. BM 10221; TR 03: r° 2:10.
II.32	*db* (hippopotamus)		**Merenptah**/P. Sallier 1 (r° 1,1-3,3) ; P. BM EA 10185 (r° 1,1-3,3) ; La querelle d'Apophis et Séqenenrê (= LESt 08) : r° 1.8. **Merenptah**/P. Sallier 1 (r° 1,1-3,3) ; P. BM EA 10185 (r° 1,1-3,3) ; La querelle d'Apophis et Séqenenrê (= LESt 08) : r° 2.5. **Ramses V**/P. Chester Beatty 1; P. BM 10681; Horus et Seth (= LESt 04): 13,9.
II.33	*dḥr* (hide; leather)		**Dyn 19**/P. Harris 500 (v° 1,1-3,14); P. BM EA 10060 (v° 1,1-3,14); La Prise de Joppé (= LESt 07): v° 2, 1. **Dyn 20**/O. DeM 00113; O. IFAO 00330: 5- 6. **Dyn 21**/P. Moscow 120; Wenamon (= LESt 05): 2,41.

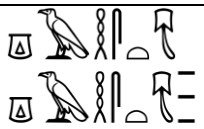
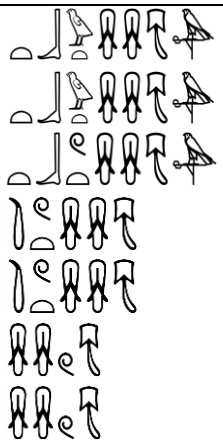
Appendix III *P. Harris I*

Close reading of the publication by Pierre Grandet (*Le Papyrus Harris I* vols. 1 and 2 with the help of the *Glossaire (Le Papyrus Harris I* vol. 3) provides 53 hieratic attestations of  (Gardiner F27). The following thirteen lexemes are attested with (Gardiner F27) in this corpus.[194]

#	Transliteration	Transcription	Date/Source
III.1	*ɜᶜny/iᶜny* (baboon)		**Ramses IV**/P. Harris I 26,12.
III.2	*iɜw.t* (animals, cattle and game)		**Ramses IV**/P. Harris I 32a,1. **Ramses IV**/P. Harris I 51a,1. **Ramses IV**/P. Harris I 51a,11. **Ramses IV**/P. Harris I 76,10. **Ramses IV**/P. Harris I 77,6. **Ramses IV**/P. Harris I 9,5. **Ramses IV**/P. Harris I 10,1. **Ramses IV**/P. Harris I 11,5. **Ramses IV**/P. Harris I 31,1. **Ramses IV**/P. Harris I 62a,7. **Ramses IV**/P. Harris I 67,2. **Ramses IV**/P. Harris I 67,7. **Ramses IV**/P. Harris I 77,5. **Ramses IV**/P. Harris I 29,9. **Ramses IV**/P. Harris I 29,10. **Ramses IV**/P. Harris I 59,20. **Ramses IV**/P. Harris I 7,9.

[194] Grandet transcribes (Gardiner F28) but for the sake of uniformity, and the interchangeable nature of F27 and F28, all attestation below are transcribed with (Gardiner F27) as is done in the rest of the present study.

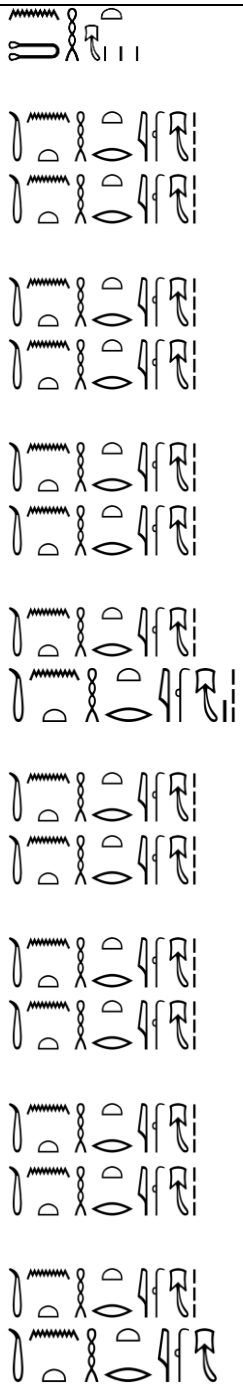
			**Ramses IV**/P. Harris I 60,4. **Ramses IV**/P. Harris I 61a,1. **Ramses IV**/P. Harris I 65a,1.2 **Ramses IV**/P. Harris I 20a,17.
III.3	*ỉkm* (shield)		**Ramses IV**/P. Harris I 22,7.
III.4	*ꜥɜ* (donkey)		**Ramses IV**/P. Harris I 77,12. **Ramses IV**/P. Harris I 78,3.
III.5	*ꜥw.t* (small livestock; game)		**Ramses IV**/P. Harris I 29,5.
III.6	*ꜥnḫ* (billy-goat)		**Ramses IV**/P. Harris I 38a,3. **Ramses IV**/P. Harris I 71b,9. **Ramses IV**/P. Harris I 54b,1.
III.7	*mɜỉ* (lion; large predator)		**Ramses IV**/P. Harris I 61b,9.
III.8	*mɜ-ḥḏ* (oryx; white antelope)		**Ramses IV**/P. Harris I 4,8. **Ramses IV**/P. Harris I 20a,13. **Ramses IV**/P. Harris I 28,4. **Ramses IV**/P. Harris I 71b,10. **Ramses IV**/P. Harris I 20a,12. **Ramses IV**/P. Harris I 35b,15.
III.9	*nrɜw* (ibex)		**Ramses IV**/P. Harris I 20a,14. **Ramses IV**/P. Harris I 71b,10.
III.10	(*tɜ-*)*n.t-ḫtr* (chariotry)		**Ramses IV**/P. Harris I 57,9. **Ramses IV**/P. Harris I 75,1. **Ramses IV**/P. Harris I 76,5. **Ramses IV**/P. Harris I 78,9.
III.11	*ssm.t* (horse)		**Ramses IV**/P. Harris I 77,4.
III.12a	*gḫs*		**Ramses IV**/P. Harris I 4,8

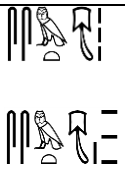
III.12b	(gazelle) *gḥs.t* (female gazelle)		**Ramses IV**/P. Harris I 20,15. **Ramses IV**/P. Harris I 71b,10.
III.13	*twt/ṯbw*(.*t*) (sandals)		**Ramses IV**/P. Harris I 56b,7. **Ramses IV**/P. Harris I 79,7. **Ramses IV**/P. Harris I 66b,9. **Ramses IV**/P. Harris I 19b,3. **Ramses IV**/P. Harris I 19b,11. **Ramses IV**/P. Harris I 72,12. **Ramses IV**/P. Harris I 73,1.

Appendix IV *KRI II*

Close reading of the publication by Kenneth Kitchen (*Ramesside Inscriptions* II) on the 'Poem' section of Battle of Kadesh tradition (specifically pages 3 through 101) provides 39 attestations of  (Gardiner F27), both in hieroglyphic and hieratic. The following six lexemes are attested with  (Gardiner F27) in this corpus.

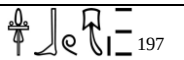
#	Transliteration	Transcription	Date/Source
IV.1	*mɜi̯* (lion; large predator)		**Ramses II**/KRI II, 92:5 - Sallier III
IV.2	*mw.t-hr.ti̯* (a horse's name)		**Ramses II**/KRI II, 82:4 - Sallier III
IV.3	*nḫt-m-Wɜs.t* (a horse's name)		**Ramses II**/KRI II, 29:10 - Sallier III
IV.4a	*ḥtr* (team of horses/bovines)		**Ramses II**/KRI II, 25:7 - Sallier III **Ramses II**/KRI II, 25:11 - Sallier III **Ramses II**/KRI II, 29 :4 - Sallier III **Ramses II**/KRI II, 31:9 - Sallier III **Ramses II**/KRI II, 32 :10 - Sallier III **Ramses II**/KRI II, 45:10 - Sallier III **Ramses II**/KRI II, 49 :16 - Sallier III **Ramses II**/KRI II, 51:16 - Sallier III **Ramses II**/KRI II, 66 :10 - Sallier III
IV.4b	(*tɜ-*)*n.t-ḥtr*		

IV.4c	(chariotry) *tȝ-n.t-ḫtr* (chariotry)		**Ramses II**/KRI II, 29 :5 - Chester Beatty 1 **Ramses II**/ KRI II, 98:14 - Luxor 3+ **Ramses II**/KRI II, 27 :11 - Sallier III **Ramses II**/KRI II, 33:10 - Sallier III **Ramses II**/KRI II, 49 :5 - Sallier III **Ramses II**/KRI II, 55 :10 – Sallier III **Ramses II**/KRI II, 55 :15 – Sallier III **Ramses II**/KRI II, 59 :15 - Sallier III **Ramses II**/KRI II, 62:10 - Sallier III **Ramses II**/KRI II, 63 :5 - Sallier III **Ramses II**/KRI II, 71 :11 – Sallier III **Ramses II**/KRI II, 71 :16 - Sallier III **Ramses II**/KRI II, 75:10 - Sallier III **Ramses II**/KRI II, 76 :5 - Sallier III **Ramses II**/KRI II, 78:10 - Sallier III **Ramses II**/KRI II, 96 :5 - Sallier III **Ramses II**/KRI II, 98:15 - Sallier III **Ramses II**/KRI II, 41 :10 - Sallier III
IV.5	*ssm.t* (horse)		**Ramses II**/KRI II, 45:16 - Sallier III **Ramses II**/KRI II, 72:15 - Sallier III

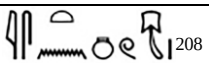
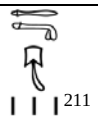
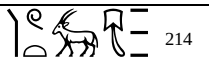
			**Ramses II**/KRI II, 87:15 - Sallier III
IV.6	*ṯryn* (armour)		**Ramses II**/KRI II, 28:7 – Karnak 1 **Ramses II**/KRI II, 28:9 – Luxor 1 **Ramses II**/KRI II, 28:10 – Luxor 2 **Ramses II**/KRI II, 28:11 – Ramesseum **Ramses II**/KRI II, 28:12 – Sallier III **Ramses II**/KRI II, 28:13 – Chester Beatty1

Appendix V *Overview core corpus*

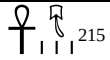
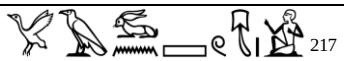
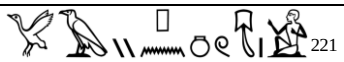
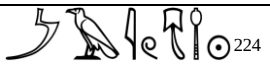
This appendix provides an overview of the hieroglyphic and hieratic lexemes attested with  (Gardiner F27) in the core corpus, i.e. KRI V, *Ramses Online*, P. Harris I, and KRI II. In case of multiple attestations of a given lexeme in Appendix I-IV, one is chosen to feature as a representation in this appendix.

Lexeme	Hieroglyphic attestation(s)	Hieratic attestation(s)	#	Appendix
ꜣᶜᶜny (baboon)		 [195]	1	III.1
iᶜny (baboon?)		 [196]	1	II.7
ꜣby (panther)		 [197]	3	II.1
pꜣ-ꜣbw-nḫt (pers. name)		 [198]	1	

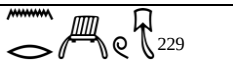
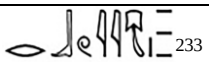
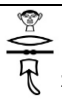
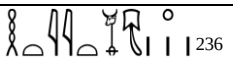
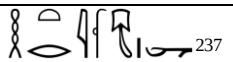
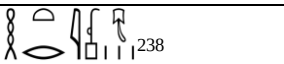
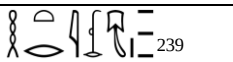
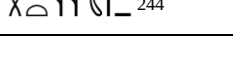
[195] From P. Harris I 26,12.
[196] From O. DeM 51; O. IFAO 406: r° 5.
[197] From LES 2,3,8.
[198] From O. DeM 00076; O. IFAO 00337: r° 2.

ỉɜw.t (animals, cattle and game) *tp-n-ỉɜw.t* (livestock)	 199	 200  201	36 1	I.1 (4); II.2 (11); III.2 (21) II.2
ỉɜd.t (type of field)	 202		1	I.2
ỉyr (stag (?); ram (?))		 203	1	II.3
ỉw (type of dog) *pɜ-ỉw* (pers. name) *sn-pɜ-ỉw* (pers. name)		 204  205  206	8 1 2	II.4
ỉspt (quiver for arrows)	 207		1	I.3
ỉstn (belt; strap)		 208	2	II.5
ỉkm (shield)		 209	1	III.3
ỉd.t/*ḥm.t* (cow; female animal)	 210		1	I.4
ʿɜ (donkey) *ʿɜ.t* (female donkey)	 211	 212  213	22 1	I.5 (4); II.6a (16); III.4 (2) II.6b
ʿw.t (small livestock; game)		 214	1	III.5

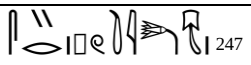
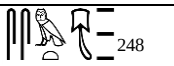
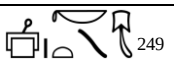
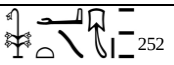
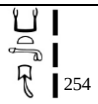
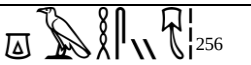
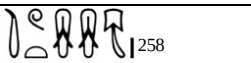
199 From KRI V, 53:14.
200 From LES 1,7,5.
201 From LES 1,5,2-3.
202 From KRI V, 225:5.
203 From LES 5,2,45.
204 From LES 1,4,4.
205 From O. DeM 94; O. IFAO 94: r° 3.
206 From P. BM 10068; TR 6; P. BM 10068 - I: r° 4:29.
207 From KRI V, 53:8.
208 From LES 3,2,1.
209 From P. Harris I 22,7.
210 From KRI V, 54:1.
211 From KRI V, 54:6.
212 From O. DeM 00064; O. IFAO 00123:1.
213 From O. DeM 73; O. IFAO 338:3.
214 From P. Harris I 29:5.

ʿnḫ (billy-goat)	 215	 216	12	I.6 (1); II.8 (8); III.6 (3)
pɜ-wnš (wolf)		 217	7	II.9
bɜby (pers. name)		 218	2	II.10
bḥs.t (female calf)	 219		2	I.7
bḥ-kɜ (a dog's name)		 220	1	II.11
pɜy-pnw (mouse) (pers. name)		 221	3	II.12
mɜi̯ (lion; large predator) *mɜi̯w-rs* (toponym)		 222  223	6 1	II.13 (4); III.7 (1); IV.1 (1) II.13
mɜ-ḥḏ (oryx; white antelope)		 224	6	III.8
tɜ-mi̯.t (female cat) (pers. name) *mi̯.t-šri̯.t* (female cat) (pers. name)		 225  226	4 1	II.14
mw.t-hr.ti̯ (a horse's name)		 227	1	IV.2
mskɜ (hide; leather)		 228	1	II.15

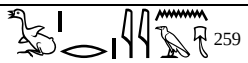
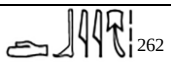
215 From KRI V, 54:6.
216 From O. DeM 00050; O. IFAO 00408: r° 6.
217 From P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 4:16.
218 From LES 4,3,9.
219 From KRI V, 54:1.
220 From P. Abbott; P. BM 10221; TR 03: r° 2:11.
221 From P. BM 10068; TR 06; P. BM 10068 - II: v° 6:16.
222 From LES 3,2,6.
223 From P. BM 10068; TR 06; P. BM 10068 - II: v° 2:3.
224 From P. Harris I 4:8.
225 From P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 3:15.
226 From P. Abbott; P. BM 10221; TR 03: r° 4:13.
227 From KRI II, 82:4.
228 From O. DeM 97; O. IFAO 157:3.

nrɜw (ibex)			2	III.9
nḫt-m-Wɜs.t (a horse's name)			1[231]	IV.3
ngɜw (long-horned cattle)			1	I.8
rby (lioness)			1	II.16
ḥrs (type of bovine) *ḥrs.t* (type of bovine (fem.))	 		1 1	I.9a I.9b
ḥty.t (uncertain)			1	II.17
ḥtr (door jambs)			1	II.18
ḥtr (tax)			2	I.10; II.19
ḥtr (team of horses/bovines) (*tɜ-*)*n.t-ḥtr* (chariotry) *tɜ-n.t-ḥtr* (chariotry)		  	15 12 17	II.20a (5); IV.4a (10) I.11 (7) + III.10 (4); IV.4b (1) II.20b (1); IV.4c (16)
ḫt.t			1	II.21

[229] From P. Harris 20a:14.
[230] From KRI II, 29:10.
[231] The one with  (Gardiner F27) out of two attestation of the name, the second in KRI II, 82:4 (). Both spellings are attested in P. Sallier III.
[232] From KRI V, 54:1.
[233] From LES 3,2,6-7.
[234] From KRI V, 54:1.
[235] From KRI V, 54:1.
[236] From P. Mayer A; TR 01: r° 4:8.
[237] From P. Mayer A; TR 01: R° 4:6- R° 4:7.
[238] From KRI V, 225:8.
[239] From P. Genève D 191; LRL 37: v° 14.
[240] From KRI V, 61:2.
[241] From LES 10,4.
[242] From P. Harris 57:9.
[243] From KRI II, 27:11.
[244] From P. BM 10052; TR 11: v° 11:8.

(hyena)				
ḫn.t (hide; skin)		 245	2	II.22
sỉ (sheep)	 246		3	I.12
srpt ((lotus) leaf; (lotus) fan)		 247	1	II.23
ssm.t (horse)		 248	4	III.11 (1); IV.5 (3)
sk (ass' foal/colt) *pꜣ-sk* (pers. name)		 249  250	1 1	II.24
šꜣỉ (pig)		 251	1	II.25
Šmʿỉw (of Upper Egypt)		 252	2	II.26
pꜣ-ḳrr (frog) pers. name		 253	1	II.27
kꜣ (bull)	 254		1	I.13
tꜣ-kỉry.t (type of monkey; animal from Nubia) (pers. name)		 255	1	II.28
gḥs (gazelle) *gḥs.t* (female gazelle)		 256  257	1 3	III.12a (1) II.29 (1); III.12b (2)
twt/ṯbw(*.t*) (sandals)		 258	12	II.30 (5); III.13 (7)

[245] From LES 3,7,2.
[246] From KRI V, 54:2.
[247] From LES 5,2,45.
[248] From P. Harris 77:4.
[249] From P. BM 10326; LRL 09; P. Salt 1821/155 : v° 15.
[250] From P. BM 10068; TR 06; P. BM 10068 - I: r° 4:15.
[251] From O. DeM 73; O. IFAO 338: v° 3.
[252] From LES 2,3,8.
[253] From P. BM 10068; TR 06; P. BM 10068 - II: v° 6:29.
[254] From KRI V, 54:1.
[255] From P. BM 10053 (r°); P. Harris A (r°); TR 07 (r°); P. BM 10053 - I: r° 2:19.
[256] From P. Harris I 4,8.
[257] From LES 4,10,7.
[258] From LES 3,7,2.

ṯryn (armour)	 259	 260	6	IV.6 (4 and 2)
ṯsm (dog; greyhound)		 261	5	II.31
db (hippopotamus)		 262	3	II.32
dḥr (hide; leather)		 263	3	II.33
ḏr (male calf)	 264		1	I.14a
ḏr.t (small calf)	 265		1	I.14b

259 From KRI II, 28:7.
260 From KRI II, 28:12.
261 From LES 1,4,7.
262 From LES 8,1,8.
263 From LES 5,2,41.
264 From KRI V, 54:1.
265 From KRI V, 54:1.

Appendix VI *Categories core corpus*

In this appendix the lexemes attested with (Gardiner F27) in in the core corpus are subdivided in to categories.

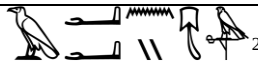
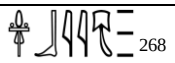
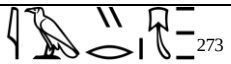
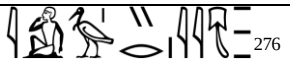
Categories	**Hieroglyphic lexemes**		**Hieratic lexemes**	
1) *animals*	I.1 (4) I.4 (1) I.5 (4) I.6 (1) I.7 (2) I.8 (1) I.9a (1) I.9b (1) I.12 (3) I.13 (1) I.14a (1) I.14b (1)	*ỉɜw.t* - ‘animals, cattle and game’ *ỉd.t*/*ḥm.t* - ‘cow; female animal’ *ꜥɜ* - ‘donkey’ *ꜥnḫ* - ‘billy-goat’ *bḥs.t* - ‘female calf’ *ngɜw* - ‘long-horned cattle’ *ḥrs* - ‘type of bovine’ *ḥrs.t* - ‘type of bovine (fem.)’ *sỉ* - ‘sheep’ *kɜ* - ‘bull’ *ḏr* - ‘male calf’ *ḏr.t* - ‘small calf’	III.1 (1); II.7 (1) II.1 (3) II.2 (11); III.2 (21) II.2 (1) II.3 (1) II.4 (8) II.6a (16); III.4 (2) II.6b (1) III.5 (1) II.8 (8); III.6 (3) II.13 (4); III.7 (1); IV.1 (1) III.8 (6) III.9 (2) II.16 (1) II.21 (1) II.23 (1) II.24 (1) II.25 (1) III.12a (1) II.29 (1); III.12b (2) II.31 (5) II.32 (3)	*ɜᶜᶜny* and *ỉᶜny* - ‘baboon’ *ɜby* - ‘panther’ *ỉɜw.t* - ‘animals, cattle and game’ *tp-n-ỉɜw.t* - ‘livestock’ *ỉyr* - ‘stag (?); ram (?)’ *ỉw* - ‘type of dog’ *ꜥɜ* - ‘donkey’ *ꜥɜ.t* - ‘female donkey’ *ꜥw.t* - ‘small livestock; game’ *ꜥnḫ* - ‘billy-goat’ *mɜỉ* - ‘lion; large predator’ *mɜ-ḥḏ* - ‘oryx; white antelope’ *nrɜw* - ‘ibex’ *rby* - ‘lioness’ *ḫt.t* - ‘hyena’ *ssm.t* - ‘horse’ *sk* - ‘ass’s foal’ *šɜỉ* - ‘pig’ *gḥs* - ‘gazelle’ *gḥs.t* - ‘female gazelle’ *ṯsm* - ‘dog; greyhound’ *db* - ‘hippopotamus’

2) *personal names containing animals*	---	---	II.1 (1) II.4 (1) II.4 (2) II.9 (7) II.12 (3) II.14 (4) II.14 (1) II.24 (1) II.27 (1) II.28 (1)	*pɜ-ɜbw-nḫt* - ‘panther’ *pɜ-ỉw* - ‘dog’ *sn-pɜ-ỉw* - ‘dog’ *pɜ-wnš* - ‘wolf’ *pɜy-pnw* - ‘mouse’ *tɜ-mỉ.t* - ‘female cat’ *mỉ.t-šrỉ.t* - ‘female cat’ *pɜ-sk* - ‘ass’s foal’ *pɜ-ḳrr* - ‘frog’ *tɜ-kỉry.t* - type of monkey; animal from Nubia
3) *(objects made from) animal material*	I.3 (1) IV.6 (4)	*ỉspt* - ‘quiver for arrows’ *ṯryn* - ‘armour’	II.5 (2) III.3 (1) II.15 (1) II.22 (2) II.30 (5); III.13 (7) IV.6 (2) II.33 (3)	*ỉstn* - ‘belt; strap’ *ỉkm* - ‘shield’ *mskɜ* - ‘hide; leather’ *ḫn.t* - ‘hide; skin’ *twt/ṯbw*(*.t*) - ‘sandals’ *ṯryn* - ‘armour’ *dḥr* - ‘hide; leather’
4) *words relating to animals*	I.2 (1) I.11 (7)	*ỉɜd.t* - ‘type of field’ (*tɜ-*)*n.t-ḥtr* - ‘chariotry’	II.20a (5); IV.4a (10) III.10 (4); IV.4b (1) II.20b (1); IV.4c (16)	*ḥtr* - ‘team of horses/bovines’ (*tɜ-*)*n.t-ḥtr* - ‘chariotry’ *tɜ-n.t-ḥtr* - ‘chariotry’
5) *miscellaneous*	I.10 (1)	*ḥtr* - ‘tax’	II.10 (2) II.11 (1) II.13 (1) IV.2 (1) IV.3 (1) II.17 (1) II.18 (1) II.19 (1) II.23 (1)	*bɜby* - (pers. name) *bḥ-kɜ* - (a dog’s name) *mɜỉw-rs* - (toponym) *mw.t-hr.tỉ* - (a horse’s name) *nḫt-m-Wɜs.t* - (a horse’s name) *ḥty.t* - ‘uncertain’ *ḥtr* - ‘door jambs’ *ḥtr* - ‘tax’

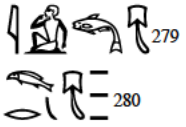
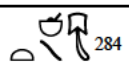
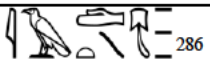
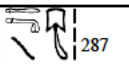
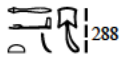
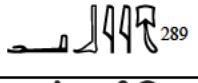
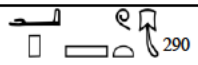
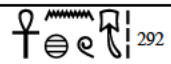
			II.26 (2)	*srpt* - ‘(lotus) leaf; (lotus) fan’ *Šmʿiw* - ‘of Upper Egypt’

Appendix VII *Overview control corpus (Lesko)*

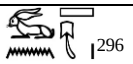
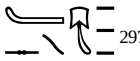
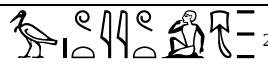
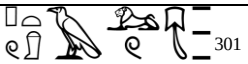
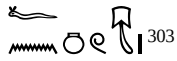
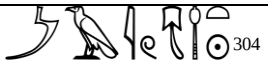
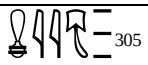
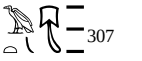
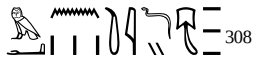
This appendix provides an overview of the hieroglyphic and hieratic lexemes in the control corpus (i.e. Lesko's *Dictionary of Late Egyptian* vols. I and II),[266] which are attested with 𓌃 (Gardiner F27). There are instances where the *Dictionary* adds a new attestation of a lexeme already in the core corpus. In these instances the attestation is numbered on the basis of its place in this appendix, not in the core corpus. The short source references in the footnotes accompanying the lexemes below are taken from Lesko.

Appendix (reference Lesko)	**Lexeme (control corpus)**	**Hieroglyphic attestation(s)**	**Hieratic attestation(s)**
VII.1 (Lesko I, p. 2)	*ꜣᶜny/iᶜny* (baboon)		 267
VII.2 (Lesko I, pp. 4-5)	*ꜣby* (panther)		 268
VII.3 (Lesko I, p. 13) (Lesko II, p. 205)	*iꜣw.t* (animals, cattle and game) *tp-n-iꜣw.t* (livestock)	 269	 270  271
VII.4 (Lesko I, p. 14, 40)[272]	*iyr* (stag (?); ram (?))		 273  274
VII.5 (Lesko I, p. 23)	***ib*** (kid; goat)		 275
VII.6 (Lesko I, p. 24)	***ibr*** (stallion)		 276
VII.7 (Lesko I., p. 35)	***inḥw*** (a small rodent)	 277	

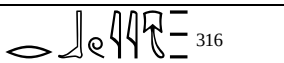
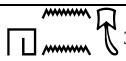
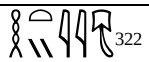
[266] Lesko inconsistently transcribes (Gardiner F27) and (Gardiner F28) but for the sake of consistency throughout the present study. Despite the fact that several scholars choose to use both, the reason for which is unclear, all attestation in the present study are transcribed with 𓌃 (Gardiner F27) on the basis of the interchangeable nature of F27 and F28, in particular in hieratic writing.
[267] From LEM 3,4,12.
[268] From Gardiner EHT I 19:3.
[269] From KRI I 51:12.
[270] From HO 88R2.
[271] From LEM 6,14,2.
[272] Lesko transliterates *iꜣr* and *iyr* respectively.
[273] From Gardiner EHT I 23:5.
[274] From LEM 5,14,5.
[275] From LEM 8,4,1.
[276] From LEM 5,17,9.
[277] From Cairo JdE 48863.

VII.8a (Lesko I, p. 44) **VII.8b** (Lesko I, p. 380)	***iḫ3*** (leather sack)[278] ***ḫ3r*** (a container and dry measure for grain)		 279 280
VII. 9 (Lesko I, p. 47)	***ispt*** (quiver for arrows)		 281
VII.10 (Lesko I, p. 47)	***ishb*** (foreign word for a type of wolf or dog)		 282
VII.11 (Lesko I, p. 50)	***ikm*** (shield)		 283
VII.12 (Lesko I, p. 53)	***id.t/ḥm.t*** (cow; female animal)		 284
VII.13 (Lesko I, p. 54) (Lesko II, p. 205)	***idr*** (herd; flock) ***tp-n-idr***	 285	 286
VII.14a (Lesko I, p. 61) VII.14b (Lesko I, p. 61)	***ʿ3*** (donkey) ***ʿ3.t*** (female donkey)		 287  288
VII.15 (Lesko I, p. 64)	***ʿby*** (uncertain)		 289
VII.16 (Lesko I, p. 65)	***ʿpš3y.t*** (a beetle)		 290
VII.17 (Lesko I, p. 67)	***ʿmdy*** (part of a chariot)		 291
VII.18 (Lesko I, p. 71)	***ʿnḫ*** (billy-goat)		 292

[278] Janssen, *Commodity Prices*, p. 401 argues that this orthography is a version of the older *ḫ3r*.
[279] From O. Gardiner 286.
[280] From LEM 11,1,3.
[281] From LEM 11,1,4.
[282] From LEM 5,13,3.
[283] From Gardiner EHT I 8:3.
[284] From LEM 5,17,9.
[285] From KRI I, 54:14.
[286] From LEM 2,3,2.
[287] From LEM 3,5,10.
[288] From LEM 8,4,12.
[289] From LEM 3,6,9.
[290] From P.Med.Berlin 3038,5,11.
[291] From *JEA* 19, 174.
[292] From LEM 8,4,1.

VII.19 (Lesko I, p. 71)	***ʿr*** (goat)		 293
VII.20 (Lesko I, p. 82)	***ʿgsw*** (belt)[294]		 295
VII.21 (Lesko I, p. 103)	*wnš* (wolf)		 296
VII.22 (Lesko I, p. 138)	*bḥs* (calf)		 297
VII.23 (Lesko I, p. 142)	***bt*** (part of a chariot)		 298
VII.24 (Lesko I, p. 143)	***btyt*** (uncertain)		 299
VII.25 (Lesko I, p. 159)	***ptr*** (domesticated animal)[300]		 301
VII.26 (Lesko I, p. 164)[302]	***fnṯ*** (worm; snake; maggot)		 303
VII.27 (Lesko I, p. 174)	*mɜ-ḥḏ* (oryx; white antelope)		 304
VII.28 (Lesko I, p. 179)	*mỉ.t* (female cat)		 305
VII.29 (Lesko I, p. 183)	***mw.t*** (mother)[306]		 307
VII.30 (Lesko I, p. 191)	***mntḏ*** (something made from leather (imported from Syria))		 308
VII.31 (Lesko I, p. 201)	***mḥbš*** (an ivory object)		 309

[293] From P. Brooklyn 47.218.50; 16,10 in Goyon p. 114 n.274..
[294] Lesko transliterates agA.t.which he apparently interprets as 'hire (?) for its value in copper'.
[295] From LEM 8,6,4.
[296] This attestation from Harris 500 pl. 4, 2 did not appear in the search of *Ramses Online*.
[297] From LEM 5,3,11.
[298] From *JEA* 19, 171.
[299] From LEM 14,4V4.
[300] Not as such in the *Wörterbuch*, the TLA (lemma-no. 62970) translates 'mule (?)' (cf. *Thesaurus Linguae Aegyptiae* < http://aaew.bbaw.de/tla/> (accessed 10-8-2018)).
[301] From HO 81,R8. Cf. Helck, *Bez.*559, 83.
[302] Lesko reads fnw (having to do with serpents).
[303] Cf. *MDAIK* 15, 177:2.
[304] From LEM 11,3,6.
[305] From Gardiner EHT I 10:1.
[306] In this instance the lexeme can be interpreted as 'dam (of horses)', cf. Lesko, *Dictionary* I, p. 183.
[307] From LEM 10,2,7.
[308] From LEM 5,17,2.
[309] The only attestation in Lesko is from P. Petersburg 1116 B, 70.

VII.32 (Lesko I, p. 206)	***mss*** (*Panzerhemd* (in *mss n ʿḥ3*)		 310
VII.33 (Lesko I, p. 206)	*msk3* (hide; leather)		 311
VII.34 (Lesko I, p. 207)	***mš3y*** (leather part of a chariot)		 312
VII.35 (Lesko I, p. 215)	***mtḏi*** (lashes of a whip (?))		 313
VII.36 (Lesko I, p. 239)	*nr3w* (ibex)		 314
VII.37 (Lesko I, p. 257)	***nḏr*** (a demon)		 315
VII.38 (Lesko I, p. 270)	*rby* (lioness)		 316
VII.39 (Lesko I, p. 270)	***rbš*** ((leather) armour)		 317
VII.40 (Lesko I, p. 274)	***rhn.t*** (ram (of Amun); criosphinx)		 318
VII.41 (Lesko I, p. 290)[319]	***h3r.t*** (pack (of game))		 320
VII.42 (Lesko I, p. 289)	***hnn*** (deer)		 321
VII.43 (Lesko I, p. 295)	***ḥ3ity*** (uncertain)		 322
VII.44 (Lesko I, p. 296)	***ḥ3yry*** (uncertain)		 323
VII.45	***ḥ3mr***		 324

[310] From O. Glasgow D.1925.70,2R1.

[311] *JEA* 16, 148, also  .

[312] From Gardiner EHT I 26:6.

[313] From Gardiner EHT I 26:8. Lesko mentions another word, namely *mdg.t*  , on p. 218. He refers to *ZÄS* 55, 93 where it becomes apparent that this is a demotic attestation of 'lord' (or *Heer* in German). Because the present study does not discuss demotic material, this attestation is not included in the control corpus.

[314] From LEM 11,3,6.

[315] From HO 3,1R5.

[316] From HPBM[3] (pl. 1).

[317] From LEM 11,1,7.

[318] From LEM 1,10,11.

[319] Lesko reads hr '(?)'.

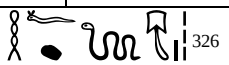
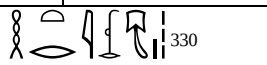
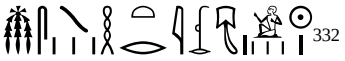
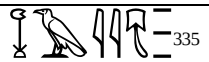
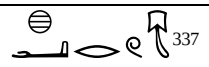
[320] From HPBM[4] T2,R67.

[321] From *JEA* 5, 12.

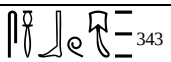
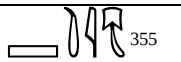
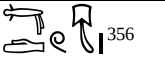
[322] From O. Berlin 1424V3 (S.A. #16).

[323] From *JEA* 19, pl. 19, cf. Helck, *Bez.* 566, 165.

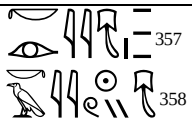
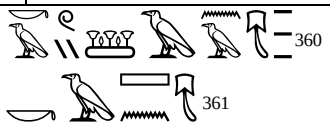
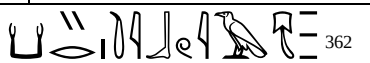
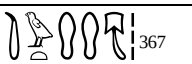
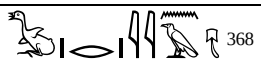
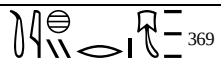
[324] From HO 3,3R1.

(Lesko I, p. 299)	(uncertain)		
VII.46 (Lesko I, p. 306)	***ḥwš.t*** (uncertain)	 325	
VII.47 (Lesko I, p. 309)	***ḫfɜw*** (snake)		 326
VII.48 (Lesko I, p. 336)	*ḥty.t*[327] (uncertain)		 328
VII.49 (Lesko I, p. 338)	***ḥtm.t*** (wild animal native to Syria)		 329
VII.50a (Lesko I, p. 338) VII.50b (Lesko II, p. 200) **VII.50c** (Lesko I, p. 204)	*ḥtr* (team of horses/bovines) *tɜ-n.t-ḥtr* ***ms-ḥtr***		 330  331  332
VII.51 (Lesko I, p. 342)	***ḥḏr*** (a mammal)		 333
VII.52 (Lesko I, p. 345)	***ḫɜy*** (hide and other waste from small livestock (also as food for predators))[334]		 335
VII.53 (Lesko I, p. 351)	***ḫyr*** (uncertain)		 336
VII.54 (Lesko I, p. 353)	***ḫˁr*** (leather (to write on))		 337
VII.55 (Lesko I, p .365) (Lesko II, p. 237)	***ḫnr*** (reins) ***ṯt-ḫnr*** (rein-looser)		 338  339
VII.56	***ḫˁw***		 340

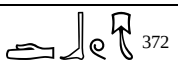
[325] From KRI I, 56:14.
[326] From HPBM[4] L2R7.
[327] Cf. Janssen, Jac. J. 1975. *Commodity Prices from the Ramessid Period: An economic study of the village of necropolis workmen at Thebes* (Leiden), pp. 305-306 who discusses the possible meaning, and value of such Hti.
[328] From LEM 15,2,9.
[329] From Gardiner EHT I 19 :3-4.
[330] From HPBM[4] L2,R59.
[331] From LEM 3,1,9.
[332] From HPBM[4] TR2,R115.
[333] From HPBM[3] (pl. 7) and ChB 3, 7R3.
[334] Cf. *Wb* III, 225.8, also xAw.t 'wolf skin' (*Wb* III, 225.9).
[335] From LEM 6,13,4.
[336] From HO 65,2V3.
[337] From HPBM[3] (PL. 25) and ChB 5, 6V2.
[338] From LEM 11,1,6.
[339] From LEM 11,1,6.
[340] From *JEA* 65, 95.

(Lesko I, p. 380)	(razor case (?))		
VII.57 (Lesko I, p. 381)[341]	*ḫn.t* (hide; skin)		 342
VII.58 (Lesko II, p. 7)	***sꜣb*** (jackal)		 343
VII.59 (Lesko II, 10 and 88)	***sꜣkꜣkꜣ*** or ***sksk*** (uncertain)[344]		 345
VII.60 (Lesko II, 11) (Lesko I, 186 and II, 11)	*sỉ* (sheep) ***mnỉw-sỉ*** (shepherd)		 346  347
VII.61 (Lesko II, 11)	***sỉbyn*** (uncertain)[348]	 349	
VII.62 (Lesko II, 77)	*ssm.t* (horse)		 350
VII.63 (Lesko II, 105)	*šꜣỉ* (pig)	 351	 352
VII.64 (Lesko II, 135 and 80)	***šsꜣ*** (bubalis antelope)		 353
VII.65 (Lesko II, 137)	***šsr*** (beef cattle)		 354
VII.66 (Lesko II, 139)	***štw*** (tortoise)	 355	
VII.67 (Lesko II, 141)	***šd(.w)*** (skin; water skin) or (leather pillow/pad)		 356

[341] On the same page Lesko includes the lexeme  Xp.t 'flock (of animals)' yielding from *Wb* III, 3656.10. Since there is no sources of potential attestations available in the *Belegstellen* this lexeme is not included in the appendix.
[342] From LEM 15,1,1.
[343] From Gardiner EHT I 18:5.
[344] Helck, *Bez.* 569,206 suggests 'a type of leather'.
[345] From HO 65,2V3.
[346] From P. Wilbour (8) 18R21.
[347] From Gardiner P. Wilbour 15R13.
[348] Lesko reads 'shelters; huts; camp' on the basis of Hoch (*Semitic Words*), p. 255.
[349] Cf. *ASAE* 42, pl. 1,14.
[350] From LEM 3,4,2.
[351] From KRI I, 55:1.
[352] From P. Leiden I, 348,4R9. This attestation did not come up in the search of *Ramses Online*.
[353] From LEM 10,3,8.
[354] From ChB 3,3R12 and HPBM^3 5.
[355] From KRI I, 324:1.
[356] From *JEA* 50, 32.

VII.68 (Lesko II, 175) (Lesko II, 171)	*kỉry* (type of monkey; animal from Nubia) cf. *ky*(*k*)*y*		
VII.69 (Lesko II, 171 and 178)	***kwšn*** (part of a chariot)[359]		
VII.70 (Lesko II, 177)	***krtbỉ*** (uncertain)		
VII.71 (Lesko II, 184 and 186)	***g*(*ɜ*)*w*(*y*)** (steed)		
VII.72 (Lesko II, 185 and 188)	***g*(*ɜ*)*f*** (monkey)		
VII.73 (Lesko II, 193-194)	*gḥs* (gazelle)		
VII.74 (Lesko II, 195)	***gḏfḏf*** (uncertain)		
VII.75 (Lesko II, 228)	*twt*/*ṯbw*(*.t*) (sandals)		
VII.76 (Lesko II, 227 and 231)	*ṯryn* (armour)		
VII.77 (Lesko II, 219)	***ṯḫr*** (leather part of a chariot)		
VII.78 (Lesko II, 236)	*ṯsm* (dog; greyhound)		
VII.79 (Lesko II, 236)	***ṯkm*** (uncertain)		

[357] From LEM 1,3,9.
[358] From HPBM[3] ChB 3,9R27.
[359] Lesko reads 'saddle pads (?); reins (?)'.
[360] From Gardiner EHT I, 24:5.
[361] From P. Brooklyn 47,218.135,2,14.
[362] From LEM 11,4,4-5.
[363] From ChB 1 (pl. 29) G1,V5-6.
[364] From LEM 11,4,3.
[365] From LEM 11,3,6.
[366] From LEM 14,2V6.
[367] From LEM 4,7.
[368] From KRI II, 119:15. This attestation is not included in the core corpus because it is attested outside of the examined section (pp. 3-101).
[369] From LEM 5,16,9.
[370] From ChB 1 (Pl. 30) G2V2.
[371] Cf. *ZÄS* 96,16 fig. 2,1.19.

VII.80 (Lesko II, 243-244)	*db* (hippopotamus)		 [372]
VII.81 (Lesko II, 244)	***dby*** (hippopotamus thongs)		 [373]
VII.82 (Lesko II, 254)	*dḥr* (hide; leather)	 [374]	 [375]

[372] From LEM 5,1b,4.
[373] From LEM 6,17,5.
[374] From KRI I, 56:15.
[375] From LEM 10,6,6.

Appendix VIII *Categories control corpus*

From the lexemes attested with (Gardiner F27) compiled in Appendix VII the lexemes in **bold**,[376] not yet featured in the core corpus, are divided into categories in this appendix.

Categories	Hieroglyphic lexemes		Hieratic lexemes	
1) *animals*	VII.7	*ỉnḥw* - a small rodent	VII.5	*ỉb* - 'kid; goat'
	VII.13	*tp-n-ỉdr* - 'herd; flock'	VII.6	*ỉbr* - 'stallion'
	VII.66	*štw* - 'tortoise'	VII.10	*ỉshb* - foreign word for a type of wolf or dog
			VII.13	*ỉdr* - 'herd; flock'
			VII.16	*ꜥpšȝy.t* - 'a beetle'
			VII.19	*ꜥr* - 'goat'
			VIII.25	*ptr* - a domesticated animal
			VII.26	*fnṯ* - 'worm; snake; maggot'
			VII.40	*rhn.t* - 'ram (of Amun); criosphinx'
			VII.41	*hȝr.t* - 'pack (of game)'
			VII.42	*hnn* - 'deer'
			VII.47	*ḫfȝw* - 'snake'
			VII.49	*ḫtm.t* - wild animal native to Syria
			VII.51	*ḫḏr* - a mammal
			VII.58	*sȝb* - 'jackal'
			VII.64	*šsȝ* - 'bubalis antelope'
			VII.65	*šsr* - 'beef cattle'
			VII.71	*g(ȝ)w(y)* - 'steed'
			VII.72	*g(ȝ)f* - 'monkey'
2) *(objects made from)*	VII.56	*ḫꜥw* – 'razor case' (?)	VII.8a	*ỉḫȝ* - 'leather sack'
			VIII.8b	*ḫȝr* - 'a container and dry measure for grain'

[376] These comprise 55 out of a total of 82 additional attestations as shown in Appendix VII.

animal material including chariotry			VII.20 VII.30 VII.31 VII.32 VII.34 VII.35 VII.39 VII.42 VII.54 VII.55 VII.56 VII.67 VII.77 VII.81	*ʿgsw* - ‘belt’ *mntḏ* - something made from leather (imported from Syria) *mḥbš* - an ivory object *mss* - in *mss n ʿḥ Panzerhemd* *mšʒy* - leather part of a chariot *mtḏi* - ‘lashes of a whip (?)’ *rbš* - ‘(leather) armour’ *ḫʒy* - ‘hide and other waste from small livestock (also as food for predators)’ *ḫʿr* - ‘leather (to write on)’ *ḫnr* - ‘reins’ and Tt-xnr – ‘rein-looser’ *ḫʿw* - ‘razor case (?)’ *šd*(*.w*) - ‘skin; water skin’, ‘leather pillow/pad’ *tḫr* - leather part of a chariot *dby* - ‘hippopotamus thongs’
chariotry related terms	---	---	VII.17 VII.23 VII.69	*ʿmdy* - part of a chariot *bt* - part of a chariot *kwšn* - part of a chariot
3) *words relating to animals*	---	---	VII.29 VII.60 VII50c	*mw.t* - ‘mother’ *mnỉw-sỉ* - ‘shepherd’ *ms-ḥtr* - give birth (to twins)
4) *miscellaneous*	VII.46 VII.61 VII.79	*ḥwš.t* - uncertain *sỉbyn* - uncertain *ṯkm* - uncertain	VII.15 VII.24 VII.37 VII.43 VII.44 VII.45 VII.53 VII.59	*ʿby* - uncertain *btyt* - uncertain *nḏr* - (a demon) *ḥʒỉty* - uncertain *ḥʒyry* - uncertain *ḥʒmr* - uncertain *ḫyr* - uncertain

			VII.70 VII.74	*sɜkɜkɜ* or *skɜk* - uncertain *krtbi* - uncertain *gd̲fd̲f* - uncertain

Appendix IX *General overview core and control corpus*

This appendix presents a general overview of all hieroglyphic and hieratic lexemes attested with  (Gardiner F27) in the core and control corpus together with their respective (*Wörterbuch*) references.

Wörterbuch (transliteration; translation)	**Lexemes core corpus**[377] **Hiero**	**Hiera**	**Lexemes control corpus Hiero**	**Hiera**
A - 				
ꜣᶜᶜny/iᶜny (baboon)[378]		x		x (VII.1)
ꜣby (panther)[379]		x		x (VII.2)
pꜣ-ꜣbw-nḫt (pers. name)		x		
i - 				
iꜣw.t (animals, cattle and game)[380]	x	x		x (VII.3)
tp-n-iꜣw.t		x	x	x
iꜣd.t (type of field)[381]	x			
iyr[382] (stag (?); ram (?))[383]		x		x (VII.4)
iw (type of dog)[384]		x		
pꜣ-iw (pers. name)		x		
sn-pꜣ-iw (pers. name)		x		
ib (kid; goat)[385]				x (VII.5)
ibr (stallion)[386]				x (VII.6)
inḫw (a small rodent)			x (VII.7)	

[377] An overview of all lexemes attested with (Gardiner F27) in hieroglyphic and hieratic can be found in Appendix V.
[378] Cf. *Wb* I, 41.5-6.
[379] Cf. *Wb* I, 7.11-14.
[380] Cf. *Wb* I, 29.15-16.
[381] Cf. *Wb* I, 35.19-20.
[382] Lesko, *Dictionary* I, pp. 14, 40 transcribes *iꜣr* as well as *iry*.
[383] Cf. *Wb* I, 38.16.
[384] Cf. *Wb* I, 48.3.
[385] Cf. *Wb* I, 61.7.
[386] Cf. *Wb* I, 63.15.

iḫ3 (leather sack)[387] ***ḫ3r*** (a container and dry measure for grain)[388]				x (VII.8a) x (VII.8b
ỉspt (quiver for arrows)[389]		x		x (VII.9)
ỉshb (foreign word for a type of wolf or dog)[390]				x (VII.10)
ỉstn (belt; strap)[391]		x		
ỉkm (shield)[392]		x		x (VII.11)
ỉd.t/ḥm.t[393] (cow; female animal)[394]	x			x (VII.12)
ỉdr (herd; flock)[395] ***tp-n-ỉdr***			 x	x (VII.13)
a - ـصـ				
ʿ3 (donkey)[396] ***ʿ3.t*** (female donkey)[397]	x	x x		x (VII.14a) x (VII.14b)
ʿw.t (small livestock; game)[398]		x		
ʿby (uncertain)[399]				x (VII.15)
ʿpš3y.t (a beetle)[400]				x (VII.16)

[387] Janssen, *Commodity Prices*, p. 401 argues that this orthography is a version of the older XAr.
[388] Cf. *Wb* III, 363.1-2.
[389] Cf. *Wb* I, 132.14-16.
[390] Cf. *Wb* I, 132.22.
[391] Cf. *Wb* I, 133.16. On the basis of the verb ***ỉstn*** meaning 'wrapped around/tied' (*umschnürt*) together with the implication ((Gardiner F27)) that it is made of certain animal material. Cf. Hannig, Rainer 1995. *Großes Handwörterbuch Ägyptisch-Deutsch (2800-950 v. Chr.)* (Kulturgeschichte der antiken Welt 64; Mainz), p. 105: *Bindung, Streifen, Riemen*.
[392] Cf. *Wb* I, 139.13-14.
[393] On the distinction between id.t and Hm.t see Collombert, Philippe 1995. 'Quelques précisions sur la lecture et la signification du mot ', *Revue d'Égyptologie* 46, pp. 205-208.
[394] Cf. *Wb* I, 152.2 and *Wb* III, 76.4.
[395] Cf. *Wb* I, 154.12-14.
[396] Cf. *Wb* I, 165.6-7.
[397] Cf. *Wb* I, 165.12.
[398] Cf. *Wb* I, 170.7.
[399] Not in *Wb*, cf. Hannig, *Großes Handwörterbuch*, p. 135 *Zügelleine*.
[400] Cf. *Wb* I, 181.19.

ʿmdy (part of a chariot)[401]				x (VII.17)
ʿnḫ (billy-goat)[402]	x	x		x (VII.18)
ʿr (goat)[403]				x (VII.19)
ʿgsw (belt)[404]				x (VII.20)
w -  /				
(*pꜣ-*)*wnš* (wolf)[405]		x		x (VII.21)
b - 				
bꜣby (pers. name)[406]				
bḥs (calf)[407] *bḥs.t* (female calf)	x			x (VII.22)
bḥ-kꜣ (a dog's name)[408]		x		
bt (part of a chariot)[409]				x (VII.23)
btyt (uncertain)[410]				x (VII.24)
p -				
(*pꜣy-*)*pnw* (mouse)[411]		x		
ptr (domesticated animal)[412]				x (VII.25)
f - 				
fnṯ				x (VII.26)

[401] Cf. *Wb* I, 187.9.
[402] Cf. *Wb* I, 205.13-14.
[403] Cf. *Wb* I, 208.10.
[404] Cf. Wb I, 236.10. Lesko, p. 82 reads *ʿgꜣt* 'hire(?) for its value in copper'.
[405] Cf. *Wb* I, 324.16.
[406] Cf. *Wb* I, 419.11-12.
[407] Cf. *Wb* I, 469.4, 11.
[408] A singular attestation not in the *Wörterbuch*.
[409] Cf. *Wb* I, 483.8.
[410] Also according to Lesko, *Dictionary* I, p. 143 and Hannig, *Großes Handwörterbuch*, p. 265.
[411] Cf. *Wb* I, 508.6.
[412] Lesko, *Dictionary* I, p. 159. Not as such in the *Wörterbuch*, TLA (lemma-no. 62970) translates 'mule (?)'.

(worm; snake; maggot)[413]				
m - 				
mɜi̯ (lion; large predator)[414] *mɜi̯w-rs* (toponym)		x x		
mɜ-ḥḏ (oryx; white antelope)[415]		x		x (VII.27)
(tɜ-)mi̯.t (female cat)[416] *mi̯.t(-šri̯.t)* (female cat)		x x		x (VII.28)
mw.t (mother)[417]				x (VII.29)
mw.t-ḥr.ti̯ (a horse's name)		x		
mntḏ (something made from leather (imported from Syria))[418]				x (VII.30)
mḥbš (an ivory object)[419]				x (VII.31)
mss (in the expression *mss n ʿḥɜ* (*Panzerhemd*)[420]				x (VII.32)
mskɜ (hide; leather)[421]		x		x (VII.33)
mšɜy (leather part of a chariot)[422]				x (VII.34)
mtḏi̯ (lashes of a whip (?))[423]				x (VII.35)
n -				
nrɜw (ibex)[424]		x		x (VII.36)

[413] Cf. *Wb* I, 577.5.
[414] Cf. *Wb* II, 11.14-15.
[415] Cf. *Wb* II, 11.5.
[416] Cf. *Wb* II, 42.4.
[417] Cf. *Wb* II, 54.4. In this instance the lexeme can be interpreted as 'dam (of horses)', cf. Lesko, *Dictionary* I, p. 183.
[418] Cf. *Wb* II, 91.
[419] Cf. *Wb* II, 128.5.
[420] Cf. *Wb* II, 149.7. Janssen, *Commodity Prices*, p. 260 translates 'tunic' or '*ghalabiyah*'.
[421] Cf. *Wb* II, 150.3-5.
[422] Cf. *Wb* II, 154.20.
[423] Cf. *Wb* II, 175.3.
[424] Cf. *Wb* II, 280.3. Cf. *niɜ* (TLA lemma-no. 79960) *Steinbock* (ibex) in *Wb* II, 202.1-4.

nḫt-m-Wɜs.t (a horse's name)		x		
ngɜw (long-horned cattle)[425]	x			
nḏr (a demon)[426]				x (VII.37)
r -				
rby (lioness)[427]		x		x (VII.38)
rbš ((leather) armour)[428]				x (VII.39)
rhn.t (ram (of Amun); criosphinx)[429]				x (VII.40)
h - 				
hɜr.t (pack (of game))[430]				x (VII.41)
hnn (deer)[431]				x (VII.42)
H - 				
ḥɜity (uncertain)[432]				x (VII.43)
ḥɜyry (uncertain)[433]				x (VII.44)
ḥɜmr (uncertain)[434]				x (VII.45)
ḥwš.t (uncertain)[435]			x (VII.46)	
ḥfɜw (snake)[436]				x (VII.47)
ḥrs (type of bovine)[437]	x			

[425] Cf. *Wb* II, 349.1.
[426] Not in the *Wörterbuch*, cf. TLA (lemma-no. 6005390).
[427] Presumably a variant of rw 'lion' (cf. *Wb* II, 403.8).
[428] Cf. *Wb* II, 414.6.
[429] Cf. *Wb* II, 441.1.
[430] Cf. *Wb* II, 481.13.
[431] Cf. *Wb* II, 495.19.
[432] Not in *Wb*. Lesko suggests 'pair (?)'. Cf. perhaps *ḥtɜ* (*Wb* II, 182.13) or *ḥty*(*.t*) 'throat' (II.17).
[433] Lesko reads 'chariot part'.
[434] Lesko reads '(donkey/ass'.
[435] Not in *Wb*. Hannig,, *Großes Handwörterbuch*, p. 520 reads 'animal (presumably from Africa)'.
[436] Cf. *Wb* III, 72.14-16.
[437] Cf. *Wb* III, 150.Cf. hry-sA (*Wb* III, 137).

ḥrs.t (type of bovine (fem.))	x			
ḥty.t (uncertain)[438]		x		x (VII.48)
ḥtm.t (wild animal native to Syria)[439]				x (VII.49)
ḥtr (door jambs)[440]		x		
ḥtr (tax)[441]	x	x		
ḥtr (team of horses/bovines)[442] *(tɜ-)n.t-ḥtr* (chariotry) *tɜ-n.t-ḥtr* (chariotry) *ms-ḥtr* 'giving birth (to twins)'[443]	x	x x x	-	x (VII.50a) x (VII.50b) x (VII.50c)
ḥṯ.t (hyena)[444]		x		
ḥḏr (a mammal)[445]				x (VII.51)
x - ⛀				
ḫɜy 'hide and other waste from small livestock (also as food for predators)'				x (VII.52)
ḫyr (uncertain)				x (VII.53)
ḫʿr (leather (as in a roll of leather to write on))[446]				x (VII.54)
ḫnr (reins)[447] *ṯt-ḫnr*				x (VII.55) x

[438] Cf. *Wb* III, 181.4-5.
[439] Cf. *Wb* III, 198.14.
[440] Cf. *Wb* III, 200.13-14.
[441] Cf. *Wb* III, 201.9-18.
[442] Cf. *Wb* III, 199.8-11.
[443] Cf. Lesko, *Dictionary* I, p. 204.
[444] Cf. *Wb* III, 203.16.
[445] Cf. *Wb* III, 214.11.
[446] Cf. *Wb* III, 244.9.
[447] Cf. *Wb* III, 298.2.

(rein-looser)[448]				
X - 				
ḫʿw (razor case (?))			x (VII.56)	
ḫn.t (hide; skin)[449]		x		x (VII.57)
s - 				
sꜣb (jackal)[450]				x (VII.58)
sꜣkꜣkꜣ or *sksk* (uncertain)[451]				x (VII.59)
sḏ (sheep)[452] *mnḏw-sḏ* (shepherd)	x			x (VII.60) x
sḏbyn (uncertain)			x (VII.61)	
srpt ((lotus) leaf; (lotus) fan)[453]		x		
ssm.t (horse)[454]		x		x (VII.62)
sk (ass's foal)[455] *pꜣ-sk*		x x		
S - 				
šꜣḏ (pig)[456]		x	x (VII.63)	x
šsꜣ (bubalis antelope)[457]				x (VII.64)
šsr (beef cattle)[458]				x (VII.65)
štw			x (VII.66)	

[448] Cf. Lesko, Leonard and Barbara Switalski Lesko 2004. *A Dictionary of Late Egyptian* II (Providence, RI), p. 237.
[449] Cf. *Wb* III, 367.12-14.
[450] Cf. *Wb* III, 420.5.
[451] Cf. Lesko, *Dictionary* II, pp. 10 and 88.
[452] Cf. *Wb* III, 424 with cross-reference to *Wb* III, 462.7-14: *sr* and *sr.t* 'ram' and 'sheep' respectively.
[453] Cf. *Wb* IV, 195.4.
[454] Cf. *Wb* III, 474 with cross-reference to *Wb* IV, 276-277.
[455] Cf. *Wb* IV, 315.12.
[456] Cf. *Wb* IV, 401 (*šꜣ*) and *Wb* IV, 405.7-10 (*šꜣḏ*).
[457] Cf. *Wb* IV, 543.5.
[458] Cf. *Wb* IV, 547.8. Hannig, *Großes Handwörterbuch*, p. 905 reeds ‚quadruped (monkey)'.

(tortoise)[459]				
šd(.w) (skin; water skin)[460] or (leather pillow/pad)[461]				x (VII.67)
Šmʿiw (of Upper Egypt)		x		
q - 				
pꜣ-ḳrr (frog)[462]		x		
k - 				
kꜣ (bull)[463]	x			
kỉry (type of monkey; animal from Nubia)[464] *tꜣ-kỉry.t*		x		x (VII.68)
kwšn (part of a chariot)[465]				x (VII.69)
krtbỉ (uncertain)[466]				x (VII.70)
g - 				
g(ꜣ)w(y) (steed)[467]				x (VII.71)
g(ꜣ)f (monkey)[468]				x (VII.72)
gḥs (gazelle)[469]		x		x (VII.73)
gdfdf (uncertain)[470]				x (VII.74)
T - 				
twt/ṯbw(.t)		x		x

[459] Cf. Wb IV, 557.1. Cf. Hannig, *Großes Handwörterbuch*, p. 908.
[460] Cf. *Wb* IV, 560.4-5 (*šd.w*).
[461] Cf. *Wb* IV, 560.6 (*šd*).
[462] Cf. *Wb* V, 61.5-6. One could consider adding 'storm-snake (?)' as a potential alternative translation. However, according to *Wb* V, 62.11 it is not attested with  (Gardiner F27).
[463] Cf. *Wb* V, 94.
[464] Cf. *Wb* V, 116.8-10 and '*kỉw*' *Wb* V, 110.4.
[465] Cf. *Wb* V, 117.9. Lesko, *Dictionary* II, p. 171: 'saddle pads (?); reins (?)'.
[466] Cf. Lesko, *Dictionary* II, p. 177.
[467] Cf. *Wb* V, 154 (*gꜣwy*) and *Wb* V, 159.9 (*gw*).
[468] Cf. *Wb* V, 155. See also *gif* '(vervet (long-tailed monkey)' (*Wb* V, 158.12-16) and '*gwf*' (*Wb* V, 160.9).
[469] Cf. *Wb* V, 191.1-9.
[470] Cf. Lesko, *Dictionary* II, p. 195.

(sandals)[471]				(VII.75)
ṯryn (armour)[472]	x	x		x (VII.76)
ṯẖr (leather part of a chariot)[473]				x (VII.77)
ṯsm (dog; greyhound)[474]		x		x (VII.78)
ṯkm (uncertain)[475]			x (VII.79)	
d - 𓂧				
db (hippopotamus)[476]		x		x (VII.80)
dby (hippopotamus thongs)[477]				x (VII.81)
dḥr (hide; leather)[478]		x	x (VII.82)	x
ḏr (male calf)[479]	x			

[471] Cf. *Wb* V, 247.5-15. See also *ṯbw.t* (sole (of the foot); sandal) (*Wb* V, 361.9-363.3) and *ṯbw* (sole; sandal) (*Wb* V, 433.14-17).
[472] Cf. *Wb* V, 386.6-10.
[473] Cf. *Wb* V, 328.2.
[474] Cf. *Wb* V, 409.13.
[475] Cf. Lesko, *Dictionary* II, p. 236.
[476] Cf. *Wb* V, 433.14-17.
[477] Cf. *Wb* V, 434.2.
[478] Cf. *Wb* V, 481.13-482.12.
[479] Cf. *Wb* V, 585.10.