


























# The Sound Values of the Signs Gardiner D1 (Head) and T8 (Dagger)

















Daniel A. Werning, Göttingen/Berlin

It is argued that the evidence in the Books of the Netherworld attested in the New Kingdom doubtlessly proves that the signs  and  corresponded to *dp* /t'(V)p/ and *dpj>dpi* /t'(V)p(V)(j)/ respectively, both with emphatic dental stop, in Middle and Late Egyptian. Further evidence dating between the 3rd and the 1st millennium BCE supports this hypothesis.

## 1. History of transcriptions


### 1.1. 1824–1864: – – –

Jean François Champollion identified the signs  and  as distinctive female and male human heads, that both corresponded to either , e.g. in   ‘tête’,     ‘sur (la tête de)’, and     ‘devant’ or to , e.g. in    ‘chef’ and ,     ‘le premier’, which he analyzed as a masculine derivate of another word for ‘head’    ‘la tête’.<sup>1</sup> It is generally assumed today that the presence or the absence of the beard is only a graphic variation that has no effect on the graphemic interpretation of the signs; and already Champollion’s examples showed that the gender difference does not always match the gender of the word. He also observed that  equaled  since they were obviously interchangeable in certain words.<sup>2</sup> Gustav Seyffarth, to the contrary, proposed the pronunciation *p* and *k* for the head.<sup>3</sup> Most other scholars, however, adopted the analysis of the French scholar. Heinrich Brugsch, for example, transcribed the head as *kâ* [≡ ] and the dagger as *śorp*(*T*) [≡ (*T*)] in 1851,<sup>4</sup> and Peter Le Page Renouf rendered   as *HeR-AP* [≡ -] in 1860.<sup>5</sup>

1 Champollion, *Dictionnaire*, p.55–61, 214, 338f [: ‘sens de  premier,  le premier’]; id., *Grammaire*, p.3[fn.3], 59, 92, 240–242, 461–463, 484f. In the first edition of his *Précis*, p.209f, he had offered no interpretation for ; in his 2nd edition, p.260f, however, he transcribed it with . He believed that ,  and  where masculine and feminine determinative articles (id., *Grammaire*, chap.VII, §1) and analyzed the spellings  and  as another feminine derivate of ()- (which itself was replaced in Coptic by ()- and ()-) and as a temporary solution transcribed it with the Coptic successor ()- ‘(la) première’ (*ibid.*, p.240f).

2 Champollion, *Grammaire*, p.242.

3 Seyffarth, *Beitragte zur Kenntnis* VII, p.38 [*r*, *g*], 106 [*r*, *k*]; id., *Prüfung der Hieroglyphensysteme*, p.10 [*p*, *pw* and *k*, *kp*], but see p.69, 80, and 85.

4 Brugsch, *Inscriptio rosettana hieroglyphica*, p.6, 20f [No.XII.11,14,25; XIII.58,61]. For  see fn.1.

5 Renouf, *Rituel funéraire*, pl.1.

1.2. 1864–1880s: *tep* – *āp* – *jp* – *t'a* – *t'at'a* – (*ha*) – (*hr*)

In 1864, Heinrich Brugsch first argued that the head corresponded to the “Aussprache  $\overset{\circ}{\text{h}}$ ” in most cases. He proved his claim through citing a spelling  $\overset{\circ}{\text{h}}$  for ‘head’, two spellings of *hotp* with the head sign, all from the Ptolemaic Period (evidence 3 c, e, j below),<sup>6</sup> as well as a Roman Demotic spelling *tepāu* [≡ *tpjw* (or *tpe*)] for ‘head’, Coptic  $\tau\pi\epsilon$  ‘upon’ (< *tpe*) and  $\tau\text{op}$  ‘head’ (< *tep*), and the renderings of the first part of Egyptian Decan names  $\overset{\circ}{\text{h}}$  in Greek  $T\pi\eta$ .<sup>7</sup> As another possible reading in particular words like  $\overset{\circ}{\text{h}}$  he assumed the reading *ha* [≡ *hʒ*].<sup>8</sup> Brugsch also addressed the question whether the reading *āp* [≡ *ʿp*] (>  $\alpha\pi\epsilon$ ) was still another possible reading, e.g. in  $\overset{\circ}{\text{h}}$ , traditionally analyzed as *āpuā-u* [≡ *ʿpw<sup>c</sup>.w*], for which he had found a spelling variant  $\overset{\circ}{\text{h}}$  *tepuā-u*, which suggested that it should be read *tep* in those instances as well (evidence 3 d).<sup>9</sup> Finally he argued that the dagger should also be read *tep*, citing a spelling  $\overset{\circ}{\text{h}}$  *suten hem-t tep-t* ‘la première épouse royale’ from the Philae Kiosk that clearly combines both signs in a single word.<sup>10</sup> Subsequently in 1867, the head is stated to correspond to *ap* [≡ *jp*] or *tep* in Samuel Birch’s Dictionary of Hieroglyphics, an addition to the English translation of C.C. Bunsen’s *Aegyptens Stelle in der Weltgeschichte*, but one can also find *ga* [≡ *dʒ*]. For the dagger the grammar notes *shaa* [≡ *ʒʒ<sup>c</sup>*] ‘first’.<sup>11</sup> In the same year, Emmanuel de Rougé listed for the head the readings *āp* [≡ *ʿp*] and, referring to Brugsch, *tep* alongside its use as a determinative.<sup>12</sup> Volume IV of Brugsch’s *Hieroglyphisch-demotisches Wörterbuch* published in 1868 contains the entries  $\overset{\circ}{\text{h}}$  *t'at'a-nu* [≡ *dʒdʒ.nw*] (var. among others  $\overset{\circ}{\text{h}}$  *t'at'a* [≡ *dʒdʒ*]) ‘der Kopf’ and  $\overset{\circ}{\text{h}}$  *tep* (var. among others  $\overset{\circ}{\text{h}}$ ,  $\overset{\circ}{\text{h}}$ , and  $\overset{\circ}{\text{h}}$  *tep*, *tepi*) ‘Kopf’, ‘der erste’, ‘oben auf’, citing the Demotic successors  $\overset{\circ}{\text{h}}$  *tep* [≡ *dp*, sic] and  $\overset{\circ}{\text{h}}$  *tepāu* [≡ *tpjw*], occurring in the Roman Period, and the Ptolemaic spelling  $\overset{\circ}{\text{h}}$  discussed earlier. There is, however, still an entry  $\overset{\circ}{\text{h}}$  *āp* [≡ *ʿp*] ‘der Kopf, die Spitze, der Anfang’.<sup>13</sup> In the sign list in his *Hieroglyphische Grammatik* published in 1872, he lists the readings *tep*, *āp*, and *her* as possible readings for the head, and *tep* for the dagger.<sup>14</sup> In the *Grammatica copto-geroglifica* by Francesco Rossi the sign list notes

6 Brugsch, Review of: De Horrack, Notice ..., p.38; id., *Matériaux*, p.49–51.

7 Fecht, *Wortakzent*, §§ 187f; compare Osing, *Nominalbildung*, p.880f.

8 Brugsch, *Matériaux*, p.48f.

9 *Ibid.*, p.20, 50f.

10 *Ibid.*, p.51f.

11 Birch in Bunsen, *Egypt's Place in Universal History*, p.346, 528, 610, 628, for *ga* see p.573, 671, 680. It also contains the entries  $\overset{\circ}{\text{h}}$  *tá* and  $\overset{\circ}{\text{h}}$  *tata* with the head as a determinative (p.532f). For the reading *ap* Birch cites Champollion, *Dictionnaire égyptien*, p.201 [h<sup>o</sup>] which does not contain an entry with the head in the edition finished in 1843. The transcription *a* can correspond to *j*, *ʿ*, or *ʒ* in particular instances.



12 De Rougé, *Chrestomathie égyptienne*, fasc.1, p.121, [No.D41] p.85 [No.t,1] and p.148 [additions to p.69]; for *tepi* see *ibid.*, fasc.2, p.116 with fn.4. In the paragraph ‘De la Polyphonie’ he also lists *ha* [≡ *hʒ*], *her*, and *teʿ* [≡ *ded*] (*ibid.*, fasc.1, p.119).

13 Brugsch, *Hieroglyphisch-demotisches Wörterbuch* IV, p.1535–1539.

14 Brugsch, *Hieroglyphische Grammatik*, p.120 [No.63] and [No.402] 130; same list in idem, *Verzeichniss der Hieroglyphen*, p.5 and 15.

*tep*, *āp*, and the use as determinative for the head, and *tep* for the dagger.<sup>15</sup> Besides *tp*, transcriptions equivalent to *jp* or *ꜥp* were still defended and used by some scholars for both the head and the dagger in the 1870s.<sup>16</sup> ☉ occasionally also used to be transcribed with equivalents to *dʾ* and *dʾdʾ*.

### 1.3. 1880s–1890s: *tep~tp – ꜥep – tʾaʾa > dʾdʾ – āp – ꜥetep~ꜥtp*

In 1881, Peter Le Page Renouf argued insistently that ‘whenever [...] the two signs ☉ and ⚔ are used interchangeably, the only value which they represent is *ꜥetep*.’<sup>17</sup> In volume VII of his dictionary released in 1882, Brugsch, on the other hand, confirmed the reading *tp—scil.* one must understand *tp*, but not *āp*, *tʾa*, or *tʾaʾa*—of the head sign also for Pre-Graeco-Roman times citing a cryptographic spelling *tp-ba* [≡ *dp-bʾ*] in the Book of Caverns.<sup>18</sup> He did, nevertheless, transcribe it with *tp*, not with *ꜥtp*. Ernest W.A. Budge, on the contrary, took the consequences out of Brugsch’s find and transcribed the head and the dagger regularly with *ꜥep*, but only until the early 20th century.<sup>19</sup> The sign list by Oscar von Lemm lists *tep* (and *āp*) as ideographic and *āp* as the syllabic value for the head, and *tep* for the dagger.<sup>20</sup> Another sign list by Simeone Levi in 1887 lists *āp* and *tp* as usual transcriptions for the head, and *bgs* and *ꜥtp* for the dagger.<sup>21</sup> In an article in 1888 addressed to Karl Piehl, Peter Le Page Renouf argued for *ꜥep* and *ꜥetep* and probably *āp* as readings for the head and again for *ꜥ(e)tep* as readings of the preposition ‘on’ and the dagger.<sup>22</sup> He also claimed to have found a spelling  ☉ *ꜥep* for ‘head’ in a papyrus from the 19th dynasty. Piehl, however, insisted on the reading *tep* in most instances mentioning among others three spellings  ⚔ for *tephē(t)* ‘cavern’ from the Graeco-Roman Period (evidence 5).<sup>23</sup> Adolf Erman used to transcribe the preposition ‘upon’ *tp*, the nisbe ‘first’ *tpi* or *tpī*, but the noun ‘head’ most often *dʾdʾ* (whereas his list also notes *tp-t*). This was partly due to the fact that he worked on Late Egyptian, in which the word *dʾdʾ* was used more often than the traditional word *tp*, and that he had published the *Papyrus Westcar* in which

15 Rossi, *Grammatica*, p.206f, 208, 352.

16 E.g. Renouf (Miscellanea V, p.76f), Georg Ebers (*Papyros Ebers* II, p.9, 49), and Richard Lepsius (Eine Aegyptisch-Aramäische Stele, p.129 fn.): “Der Kopf ☉ hat verschiedene Aussprachen: *tep*, *āpe*, aber auch *tʾaʾa* und *ka* [seemingly for *ka* (=kʾ or gʾ?), D.W.] ([...])”.

17 Renouf, Meaning of the Word *Hotep*, p.119, and again in id., Prepositions ☉ and ⚔ ☉. This idea has been developed by Franz Joseph Lauth, Johannes Dümichen, and himself since the late 1860s.

18 Evidence 10 b below. The re-discovery of the evidence in the Book of Caverns about 120 years after Brugsch’s first mentioning of it happened to be the starting point for this study.



19 E.g. *ꜥep* in Budge, *Easy Lessons* (1st ed.–4th ed.), p.55 [*tep*, *tʾaʾa*] and 85 [*ꜥep*]. In id., *Hieroglyphic Vocabulary of the Book of the Dead*, p.430f [*tep* ‘head’, ‘upon’ *tēpi* ‘first’] and id., *Hieroglyphic Dictionary*, p.828–831, pls.105 and 137, however, he transcribed it with *tep* again.

20 Von Lemm, *Ägyptische Lesestücke*, p.10, 37.





21 Levi, *Vocabolario Geroglifico*, No.203, 1072/3.

22 Renouf, ‘Note on the values of the sign ☉’.



23 Piehl, Notes de philologie égyptienne, p.109–111, cf. *PM* V, 21 and 23. Renouf defended his own position in his ‘Note [...] on No.24’. Piehl reacted with a note ‘On the Formative Letter ⚔’.

the name  $D^3d^3$ - $m$ - $nh$   suggested that the head in the earlier attested name  was probably to be read  $d^3d^3$  as well.<sup>24</sup>



#### 1.4. 20th century: $tp$ – ( $d^3d^3$ )



In 1899 in an article ‘Notes on Hieroglyphs’, which Alan Gardiner later referred to in his *Egyptian Grammar*, Francis Ll. Griffith reaffirmed that the Demotic spellings suggested  $tp$ —i.e. not  $d^3d^3$ —as the standard reading of the older hieroglyphic ; but he stated that “it is possible that  $tp$  represents an early   $zp$  [ $\equiv dp$ , D.W.], as no early variants exist; but certainly  was never  $z'z'$  [ $\equiv d^3d^3$ ].”<sup>25</sup> Subsequently  $tp$  and  $tpj$  became the standard readings of the head and the dagger in the influential works of Adolf Erman<sup>26</sup>, Kurt Sethe, Alan Gardiner, and others during the first half of the 20th century. Although some of the slips in the archive of the Berlin Dictionary were originally attributed to readings  $d^3d^3$  for the head sign they were finally attributed to the reading  $tp$ . But the case of  is still mentioned in the entry  $tp$  ‘head’ of the Dictionary.

Only recently Frank Kammerzell suggested  $tp$  ( $^*/kap/>/^*/cap/$ ) as the actual reading of the word ‘head’ in (Pre-)Old Egyptian (evidence 4).

All possible dental/alveolar and palatal phonemes concerning the initial stop of  and/or  in older Egyptian have until today at least been taken into account and a collection of the pieces of evidence available is presented here.

## 2. Reexamination



As far as the consonantal compatibility restrictions are concerned either reconstruction is theoretically possible:  $t+p$  (e.g.  $htp$  ‘to be pleased’),  $\bar{t}+p$  (e.g.  $tp\bar{h}.t$ <sup>□</sup> ‘cavern, hole’),  $d+p$  (e.g.  $dpi$ <sup>□</sup> ‘to taste’), and  $\bar{d}+p$  (e.g.  $p\bar{d}.t$  ‘bow’).<sup>27</sup> The sequence  $dp$ , however, is not attested in Old and Middle Egyptian so that the lexeme ⟨head/top⟩ would be the only one. The equivalence of  and  is proven by their interchangeability already in the Pyramid Texts.<sup>28</sup>

24 Erman, *Papyrus Westcar* II, p.28 [prepos.  $tp$ ], 30 [ $^{\text{Ⓢ}}$  und seltener  [...]  $d^3d^3$  ‚Kopf‘]; id., *Neuaegyptische Grammatik*, 1st ed., §§31 [  $tata$  ‘Kopf’], 90 [ $^{\text{Ⓢ}}$   $tpi$  (?) ‘der erste’], 118 [ $^{\text{Ⓢ}}$   $hr tp$  (?)  $ga?$ ] ‘oben auf’], 2nd rev. ed., §§660f [ $tp$ ,  $d^3d^3$ ]; id., *Aegyptische Grammatik*, 1st ed., p.174 [“eig[entlich]  $tp$ - $t$  Kopf,  $d^3d^3$  Kopf; ü[er]tr[agen]  $tp$  auf; det. Kopf”], 188 [“ü[er]tr[agen]  $tpi$  erster”], 131 [“ $tp$  (eig[entlich] Kopf o.ä.) ‚auf‘ ist veraltet”], word list p.58\*, 67\*f. To the problem of  $tp$  vs.  $d^3d^3$  still Edel, *Altägyptische Grammatik* I, §§52f [p.23f]. For the names see Ranke, *Personennamen* I, p.380.2, 405.20.

25 Griffith, Notes on Hieroglyphs, p.269.

26 Erman, *Ägyptische Grammatik*, 2nd rev. ed., p.206 [“eig[entlich]  $tp$  Kopf,  $d^3d^3$  Kopf; ü[er]tr[agen]  $tpj$  erster; det. Kopf, nicken, gw”], 162 [“ $tp$  (eig[entlich] Kopf o.ä.) ‚auf‘ ist veraltet”], 223 [“ü[er]tr[agen]  $tpj$  erster”], 163 [ $^{\text{Ⓢ}}$   $hr d^3d^3$  ‘auf (dem Kopf)’] (= 3rd compl. rev. ed., p.291, 238, 310, 239).

27 See also Peust, *Phonology*, p.195f, 299.

28 E.g. *Pyr.* 389c: W.: , N.: ; *Pyr.* 302b, *Pyr.* 701b, *Pyr.* 705a, *Pyr.* 724b,c.

The earliest hints on the nature of the initial stop that had been taken notice of where discovered by Brugsch. Except for the cryptographic spelling in the Book of Caverns, they all point to the non-emphatic dental *t* /*t*/ and date as late as the Graeco-Roman Period. Further evidence was provided by the slip archive of the Berlin Dictionary. There the earliest instances of (alpha)betical spellings of the stem are two renderings  $\overset{\circ}{\square} tp(i)^{29}$  for the word ‘first’, dating to the 9/8th and 4th centuries BCE (evidence 1 and 2). Until the time of the compilation of the Berlin Dictionary, Brugsch, Piehl and the slip archive provided at least the following evidence, all of which dates to the Graeco-Roman Period (evidence 3 and 5): the noun ‘head’  $\overset{\circ}{\square} \textcircled{\text{D}} tp^{\textcircled{\text{D}}}$  (2x), the nisbes ‘first’  $\overset{\circ}{\square} tp(i)$  (4x) and ‘(being) upon/at the head of’  $\overset{\circ}{\square} tp(j.t)^{30}$ , ‘ancestors’  $\overset{\circ}{\square} \textcircled{\text{D}} tp(j).w^{-c}(w)^{\textcircled{\text{D}}}$ , ‘earlier’  $\overset{\circ}{\square} \textcircled{\text{D}} tp(j).w^{-c}(w)^{\textcircled{\text{D}}}$ , probably the preposition ‘upon’  $\overset{\circ}{\square} tp \sim \overset{\circ}{\square} \textcircled{\text{D}} tp^{\textcircled{\text{D}}}$  in a compound *tp-sw-10-nb* ‘decade, week’, ‘The one on top’ (i.e. the White Crown)  $\overset{\circ}{\square} \textcircled{\text{D}} tp(j.t)^{\textcircled{\text{D}}}$ , spellings of ‘peace’ *htp*<sup>31</sup> and of ‘cavern’ *tph(.t)* (<*tph.t*<sup>□</sup>) with the head, and the ambiguous renderings in Demotic  $\$ \underline{\text{z}} \sim \$ \text{t} \underline{\text{z}}$  and in Coptic  $\tau\pi\epsilon$  and  $\tau\sigma\tau$ <sup>32</sup>. There were, however, Renouf’s spelling  $\overset{\circ}{\square} \textcircled{\text{D}} dp$  in an hieroglyphic papyrus from the 19th dynasty,<sup>33</sup> one spelling  $\overset{\circ}{\square} \textcircled{\text{D}} dp(j).w^{-c}(w)$  ‘ancestors’ in the archive dating to the 4th century BCE and two ‘sportive’ spelling of ‘first’ as  $\overset{\circ}{\square} db$  in the Ptolemaic Period (evidence 15 and 17).

The oldest strong evidence for the nature of the initial stop can be found in the Books of the Netherworld attested in the New Kingdom. No less than 14 instances of the words ‘head’, ‘upon’, and ‘(Human) Headed (One)’ in the Amduat, in the Book of Caverns, and in two ‘enigmatic’ treatises on the second shrine of Tutankhamen and in the tomb of Rameses VI clearly prove the equivalence of  $\textcircled{\text{D}}$  to *dp* /*t*’(V)*p*/ as early as the 15th century BCE (evidence 8–11).<sup>34</sup> Since all of these spellings are situated in the so-called cryptographic passages, only few scholars who have taken notice of them took it seriously enough to question the reading *tp*—among them E.W.A. Budge (†1934) who transcribed *tep* for nearly three decades, but finally gave up and returned to the reading *tep*, and Peter Le Page Renouf (†1897).

29 Like Adolf Erman in the 1st ed. of his *Ägyptische Grammatik* (p.10, but not anymore in the 2nd ed., p.8) and Carsten Peust (*Phonology*, p.50), I use the transcription symbol *i* for  $\textcircled{\text{D}}$ .

30 Turned out to be an error; see evidence 3 n.

31 Later, one of Brugsch’s finds turned out to be an error of Lepsius’ publication; see evidence 3 j.

32 Brugsch (*Matériaux*, p.51) cites Coptic  $\tau\sigma\tau$  ‘head’ without any reference. None of the Coptic dictionaries do mention it, though.

33 Renouf, Note on the values of  $\textcircled{\text{D}}$ , p.571f. For pBM 9971 see Shorter, *Catalogue*, p.11.

34 Scholars do not agree on the date of the compilation of the Amduat until now (Old Kingdom–early New Kingdom). Only recently Joachim F. Quack (Review of: Zeidler, *Pfortenbuchstudien*, p.557f) argued for the creation of many of the Books of the Netherworld in the Old Kingdom. The earliest text witness, however, dates to the reign of queen Hatshepsut (Mauric-Barberio, *Le premier exemplaire du Livre de l’Amdouat*, p.333f).

But in fact there is no reason to doubt this evidence; certain rules underlying the cryptographic spellings of these works allow for a reliable interpretation of them.<sup>35</sup> In the Amduat the initial stop in question is spelled with  $\Rightarrow$  in all of the four occurrences of cryptographic spellings of  $\text{𓆎}$ . The large majority of the ‘cryptographic’ writings in this book are merely alienated spellings within the framework of the traditional sign interpretations (additionally deprived of most of the more or less redundant information like determinatives). Therefore the  $\Rightarrow$  most likely denotes a  $d /t'/$ .<sup>36</sup> Hermann Grapow has wondered whether these spellings were evidence for a possible interchange of  $\text{𓆎}$  and  $\Rightarrow$  already in the time of the New Kingdom, at least in the word ‘head’.<sup>37</sup> In principle, it is not unthinkable that in analogy to the regular exchange of  $\text{𓆎}$  with  $\Rightarrow$  in cryptography  $\text{𓆎}$  could be exchanged with  $\Rightarrow$  too. But this would require that a sound shift analogous to the de-palatalization ( $/c/ > /t/$  and  $/c' / > /t' /$ ) that allowed for exchanges of the signs for palatal and for non-palatal stops could have also been observed for  $/t' / > /t /$  at the time of the creation of the Amduat, i.e. not later than the 15th century BCE<sup>38</sup>. But from all we know about the emphatic opposition this was not the case until some hundred years later and even then only in certain positions.<sup>39</sup>

In the later Books of the Netherworld, in addition to the alienation of the spellings, many signs were exchanged by others according to certain rules, i.e. they were encrypted in the strict sense. One of the most common devices was the exchange of signs that depict objects of the same category. Except for three instances in the Book of Caverns, in the other cryptographic spellings of the word ‘head’ and the derivate ‘the (human) headed one’ the initial stop is rendered by  $\text{𓆎}$ . This must be interpreted as being an exchange for unattested  $\text{𓆎} /c' / (> /t' /)$  according to the category exchange principle, which itself should be interpreted as an exchange for  $\Rightarrow /t' /$  according to the sound shift principle discussed above. In general Egyptian  $\text{𓆎} /c /$ ,  $t /t / (< /c /)$  and  $t /t /$  are all rendered by  $\Rightarrow$ , or occasionally by  $\text{𓆎}$ , whereas  $d$  and  $d (< d)$  are rendered by  $\text{𓆎} /t' / (< /c' /)$  in the cryptographic system of the later Books of the Netherworld.<sup>40</sup> In the

35 I am preparing a description of these systems with a list of all sign equivalences proven by equations in those passages written in standard orthography and cryptographic orthography.

36 An interpretation on the basis of the logographic acrophonic principle would require a contemporary pronunciation pattern such as  $/KV(?) /$ ,  $/KV(j) /$ , or  $/KV(w) /$  since it is normally not used when there is more than one ‘strong’ consonant. The history of the noun *dr.t* ‘hand’ can be reconstructed as  $/c'a:rVt / > /t'o:rV / > \text{𓆎} \text{𓆎} \text{𓆎} \text{𓆎} \text{𓆎} \text{𓆎} /t'or\text{ə} /$  (trad.:  $/t'o:r\text{ə} /$ ; Peust, *Phonology*, see p.86, 253f:  $/tor\text{ə} / \sim /tori /$ ; Reintges, *Coptic Egyptian*, see p.27, 32:  $/t'o:r\text{ə} /$ ), but stat. pron.  $/c'artV / > /t'a?t(V) / > \text{𓆎} \text{𓆎} \text{𓆎} \text{𓆎} \text{𓆎} /t'o:t /$  (trad.:  $/to?t /$ ; Peust, *op.cit.*, p.212:  $/t'o:t /$ ; Reintges, *op.cit.*:  $/to?ot /$ ). Compare Vycichl, *Dictionnaire*, p.219f. For the retention of the emphatic feature see discussion below.

37 Grapow, *Studien zu Königsgräbern*, p.29. Similarly, only recently, Darnell, *Enigmatic Netherworld Books*, p.45 in case of some spellings on the second shrine of Tutankhamen.

38 But see f.34.

39 Compare Peust, *Phonology*, p.84–86, esp. fn.72.

40 Piankoff, *Livre de quererts* (no. refer to plates):  $\text{𓆎} \rightarrow \text{𓆎}$  [passim];  $\text{𓆎} \rightarrow \text{𓆎}$  (*ntr > ntr >*) *ntj ~ nt (> NOYTE)* [73, 69];  $\text{𓆎} \rightarrow \text{𓆎}$  (*t(β)z >*) *ḥs (> xwc)* [77];  $\text{𓆎} \rightarrow \text{𓆎}$  *ḥd.yt (ḥ3d > 2ḥrt)* [78];  $\text{𓆎} \rightarrow \text{𓆎}$  (*? >*) *sdf-ḥr* [78];  $\text{𓆎} \rightarrow \text{𓆎}$  (*? >*) *ḥd* [146];  $\text{𓆎} \rightarrow \text{𓆎}$  *dmdy* [68, 149]

Book of Caverns, however, the initial stop of ‘head’ is rendered by 𓇗 once and by 𓇘 twice. The usage of 𓇗 in the Amduat shows that it most likely stands for /t’/ (or /t’a/) according to the acrophonic principle (/c’aw/>/t’aw/><sup>S</sup>𓇗𓇗~<sup>B</sup>𓇗𓇗<sup>41</sup> /t’ow/~’t’ow/, trad. /t’ow/<sup>A2</sup>).<sup>43</sup> The rendering as 𓇘 is suspicious though, since as according to the statements above one would have expected 𓇗. We can either interpret this phenomenon as one of the less frequent spellings of consonants with the sign of standard orthography, or we can look at it as a case of an interchange of 𓇘 and (\*𓇗→)𓇗 for the opposition /c’/ : /t’/ according to the sound shift principle.

It is clear, however, that the cryptographic spellings in the Books of the Netherworld prove the emphatic nature of the initial stop of the lexeme ‘head’ and the nisbe ‘upon’ and so suggest a pronunciation /t’Vp/ for ‘head’ in the 2nd millennium BCE. The seemingly apparent evidence for a non-emphatic reading *tp* dating from the early 3rd millennium BCE found by Kammerzell should therefore be explained otherwise (evidence 4).

The possibility remains, nevertheless, that Middle Egyptian 𓇗 *dp* /t’Vp/ developed form a hypothetical Old Egyptian \*\**dp* /c’Vp/.<sup>44</sup> Unfortunately no indubitable proofs from the time of the Old or Middle Kingdom have appeared, to my knowledge, to shed light on this question.<sup>45</sup> There is only one sign group 𓇗 in the pyramid of Unas which is most likely to be read *dp* ‘head’. Scholars have, until now, analyzed this as the phrase (*w*)*di tp*; but the reading *dp* ‘head’ probably makes more sense and is grammatically less problematic (see evidence 6). Another hint in the Pyramid Texts that the initial stop was a *d*, indeed, could be instances of the word ‘head’ in poetic

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(compare fn. 43); 𓇗→𓇗 (𓇗~*dr*>)𓇗 [62]; 𓇗𓇗→𓇗𓇗 𓇗<sup>?</sup> 𓇗𓇗<sup>?</sup> wd𓇗(>OYXAI?) [149]; also 𓇗𓇗→𓇗𓇗 (𓇗>)psd [62].

- 41 Compare Vycichl, *Dictionnaire*, p.223f.
- 42 I tentatively assume that the Bohairic opposition 𓇗 : 𓇗 before stressed vowels corresponds to a doubly marked opposition /t/ [t<sup>h</sup>] : /t’/ [t’], in which the emphatic opposition is still preserved from earlier Egyptian, whereas the breathy articulation is a (chronological and/or phonological) secondary phonetic feature. It is possible, however, that this breathy articulation was also present in the other dialects and/or earlier Egyptian but left no reflex in their writing systems (compare Peust, *Phonology*, p.83–88, who assumes an phonological opposition *t* /t<sup>h</sup>/ : *d* /t/ already for earlier Egyptian but its neutralization in Sahidic). For the conditions of the retention of the emphatic feature in Coptic see discussion below.
- 43 Hornung, *Amduat* I–III (no. refer to pages): 𓇗𓇗→𓇗𓇗 hndw [195, 196, 310, 563 (𓇗𓇗)]; 𓇗𓇗... hꜥd.w (hꜥd>𓇗jrt) [788, 791]; 𓇗𓇗→𓇗𓇗 dmdw (\*√dmd>dmd>dmd>𓇗𓇗𓇗~𓇗𓇗𓇗) [661], compare 𓇗𓇗 dmd.t [484], 𓇗𓇗 dmd.yt [557], and 𓇗𓇗 dmd.t [636].
- 44 Peust, *Phonology*, 123–125.
- 45 There is, however, one interesting case on the coffin of Queen Mentuhotep from the 17th century BCE found by Matthias Müller that unfortunately contains an error in the same word and does not hold as a strong proof: ... 𓇗 𓇗𓇗𓇗 𓇗 𓇗𓇗𓇗 ... mri=s [“*c*q=f *m*- *qr*(r).(w)t<sup>1</sup> jm(j).(w)t d*cp*”=k ‘... for she wishes that it enters the cavity in your he<ad>’ (Geisen, *Sarg der Mentuhotep*, p.22, pl.1; compare *CT* IV 410 c [777]). I also found two exceptional spellings of the nisbe ‘first’ with 𓇗 on two coffins from Deir el-Bersheh that I cannot offer a convincing explanation for: 𓇗 for 𓇗 *dpj* (*CT* IV, 377 c [346]: CG 28123) and 𓇗 for 𓇗~𓇗 *dp(j).t* (*CT* VI, 436 h [1108]: BM 30842).

verses with apparent alliterations, e.g. *dm ds* <sup>ᵛ</sup>=*k* ... *dr dp.(w)t ḥsq* <sup>ᵛ</sup>*ḥʕt(j).(w)ᵛ* (see evidence 7).

There are additional pieces of evidence dating from the New Kingdom to the Arabic Period that may point to an emphatic pronunciation of the initial stop in *dp*<sup>1</sup> ‘head’ and in *dp(i)* ‘upon’ and ‘first’.

There is a word *\*hr(i)db* /hVrVt’Vb/ attested in Neo-Assyrian HUR-DI-BI *har(V)-tib(i)*, Old Testament Hebrew and Aramaic ~jor.x; *ḥartom*, Demotic *ḥrtm* (*p-)**ḥrdby*, and Greek φριτοβ that designates an Egyptian literate official who, in some cases, gives advise to the pharaoh (evidences 13 b–e). It is very likely that this term derived from the second part of the older Egyptian title *ḥr(i)-ḥ(ʕ)b(.t)* *ḥr(i)-dp* ‘lector priest (and) chief’~‘leading lector’, which, as a shortening for the whole, became a title for a person trained in hieroglyphs.<sup>46</sup> A ‘sportive’ spelling variant *ḥ* for *ḥr* suggests that this title was pronounced somewhat like *\*/ha’ri:t’ab/* as early as the 13th century BCE (evidence 13 a). This was subsequently borrowed into the languages of the cultures north-east of Egypt in the form *\*/har’ṭVb/* at some point before the 7th century BCE. In Egypt itself *\*/ha’ri:t’ab/* developed into *\*/(pʕ)ḥə’rit’əb/*,<sup>47</sup> which was rendered in Greek as φ(ε)ριτοβ. If this analysis is correct the hieroglyphic spelling variant and the Neo-Assyrian and Hebrew borrowings all point to the marked nature of the dental stop rather than to a unmarked one.<sup>48</sup>

Another case of a possible borrowing into Old Testament Hebrew has been proposed by Manfred Görg. He suggested that the *hapax* *ṭAxp’j*. *ṭpāḥōt* in the description of the cedar palace of King Salomon derived from Egyptian *dp-ḥ(w).t*<sup>ᵛ</sup> *\*/t’VphV(KV?)/*, which had a feminine gender in Late Egyptian (evidence 14). The syllable structure with a vowel between *p* and *h* and the seemingly feminine-plural ending *-ōt* (< *-āt*) in the Hebrew word are suspicious, though.

Finally there is the interesting case of the Egyptian-Arabic town name *Atfīḥ* *أطفيح* which was inherited from Coptic <sup>S</sup>(*πϵ·*)*τπηϷ* /(*pə*)*t*<sup>(ʕ?)</sup>*piḥ*/ [(*pə*)*t*<sup>(ʕ?)</sup>*piḥ*]<sup>B</sup>(*πϵ·*)*τπϵϷ* /(*pə*)*t*<sup>(ʕ?)</sup>*pēḥ*/ [(*pə*)*t*<sup>(ʕ?)</sup>*pēḥ*]>[(*pə*)*t*<sup>(ʕ?)</sup>*bēḥ*] going back to earlier Egyptian *dp-ḥ(w).t*<sup>ᵛ</sup> *\*/t’ap-(j)u:ḥV(w)/* (evidence 18). On the basis of the traditional reading *tp(j)-ḥ(w).t*<sup>ᵛ</sup>, Wolfgang Schenkel had to explain the emphatic rendering of the dental in *Atfīḥ* as a phenomenon of secondary emphatization.<sup>49</sup> It is tempting to interpret this as a reflex of a Coptic predecessor *\*/(pə)t’piḥ/* but since the dental stop had never been in direct contact with the stressed vowel the emphatic feature should have not survived into Coptic according to Schenkel’s claim discussed below. So maybe his explanation still points into the right direction.

46 Kees, Vorlesepriester, esp. p.130, 136.

47 For the retention of the emphatic articulation of /t’/ see discussion below.

48 Hans Goedicke (*Ḥartummim*, esp. p.27–30) rejects the equation of *ḥ* and *ḥr*; and he argues that the Egyptian equivalent of the Hebrew title was *\*hr(i) tm’*.

49 Schenkel, Glottalisierte Verschlusslaute, p.42: *Atfīḥ* < Copt. *\*Petp’ēh* < Eg. *Pr.w- tap.īl-’iḥ.w*.



Crucial to the interpretation of the post New Kingdom evidence is the question until when and in which positions the proposed emphatic feature of the *t* : *d*-opposition ( $\overset{\circ}{\text{t}} / \text{t}'$ ,  $\overset{\circ}{\text{c}} / \text{c}'$  vs.  $\overset{\circ}{\text{t}} / \text{t}'$ ,  $\overset{\circ}{\text{c}} / \text{c}'$ ) is preserved and until when it is rendered in the different writing systems. The earliest hints for a possible loss of the emphatic feature date to the later New Kingdom<sup>50</sup> and Schenkel argued that the emphatic opposition is regularly preserved in Coptic, at least before and after stressed vowels with or without a sonorant between the two ( $\rightarrow$  Eg.-Arab.  $\text{ﺕ} / \text{t}' : \text{ط} / \text{t}'$ ).<sup>51</sup> It is well known that there is still a reflex of the opposition in the Bohairic Coptic writing system before the stressed vowels ( $> \text{ⲟ} [\text{t}^{\text{h}}] : \text{Ⲡ} [\text{t}']$ , trad.  $\text{ⲟ} [\text{t}^{\text{h}}] : \text{Ⲡ} [\text{t}]$ ).<sup>52</sup>

As far as the writing systems are concerned it is traditionally assumed that the apparent merger of emphatic and non-emphatic graphemes in Demotic and the interchangeability of the two in the hieroglyphic system of the Ptolemaic temple texts reflect a loss of the emphatic opposition on the phonological level. It is not clear, however, whether this exchange reflects an actual sound shift or merely a neutralization of the graphemic opposition in particular texts and/or phonological environments.<sup>53</sup> This is especially likely for the archaic words discussed here, the history of which can tentatively be reconstructed as follows:<sup>54</sup>

- $\overset{\circ}{\text{t}}$  OEG.  $^*/\text{t}'\text{ap}/$  (possible var.  $\overset{\circ}{\text{t}}$ ), stat.pron.  $^*/\text{t}'\text{apVK}/$  (var.  $\overset{\circ}{\text{t}}$ ) 'head'  
 $>$  MEg.-LEg.  $^*/\text{t}'\text{ap}/$  (crypt.  $\overset{\circ}{\text{t}} \sim \overset{\circ}{\text{t}} \sim \overset{\circ}{\text{t}} \sim \overset{\circ}{\text{t}}$ ; poss. hierogl.  $\overset{\circ}{\text{t}}$  in 19th dyn.)  
 $>$  Gr.-Rom. Neo-MEG.  $^*/\text{t}'\text{ap}/$ ,  $^*/\text{t}'\text{ap}/$  (var.  $\overset{\circ}{\text{t}}$  !)  
 $>$  OCopt.  $^*/\text{t}'\text{ap}/$ ,  $^*/\text{t}'\text{ap}/$  (stat.pron.  $\text{ⲧⲟⲃⲗ} [\text{t}'\text{ap}^{\text{h}}]$ ),  
 Rom.-Demot.  $\text{ⲕⲓⲗ} \sim \text{ⲕⲓⲗ} (p-)dp(e)^{\circ} / (p^{\text{h}}-)t'Vp(\text{ə})/$  (compare  $(t-)cpe^{\circ}$  below)  
 $>$  Copt. † (one would expect  $^{**\text{AL}}\text{ⲧⲁⲡ}$ ,  $^{**\text{SB}}\text{ⲧⲟⲡ}$ ),<sup>55</sup>  
 but non-stressed part in compounds:  
 $>$  LEg.  $^*/\text{t}'\text{ap-}/$  ( $[\text{t}'\text{ap}] \sim [\text{t}'\text{ap}]$ )  
 $(>$  Napat.  $\overset{\circ}{\text{t}} \text{ⲗ} d(i)b-^*/\text{Təb-}/$ , in which the opposition of *d* and *t* is neutralized)  
 $>$  Demot.  $-\text{db}(y) / -\text{t}'\text{ap}(V) / [-\text{t}'\text{ap}(V)]$  (directly succeeding stressed vowel)  
 $>$  Copt.  $^{\text{B}}\text{ⲧⲟⲃ} / \text{t}^{\text{h}}\beta / [\text{t}^{\text{h}}\beta] (?) \sim \text{SALF} \text{ⲧⲃ} / \text{t}\beta / [\text{t}\beta] \sim \text{S} \text{ⲧⲟⲘ} / \text{tw}/$ ,  
 but directly before stressed vowel also  $^{\text{SB}}\text{ⲧⲧ} / \text{tp-} / [\text{tp-}]$  (in  $\text{ⲧⲧⲏⲗ}$ ),  
 and exceptionally in compound  $^{\text{SALBF}}\text{ⲧⲁⲡ} \sim \text{M} \text{ⲧⲟⲡ}$  (in  $\text{ⲧⲁⲡⲣⲟ} / \text{t}'\text{ap}'\text{r}^{\circ}$ , f.).<sup>56</sup>

50 But compare Peust, *Phonology*, p.84–86, esp. fn.72.

51 Schenkel, *Glottalisierte Verschlusslaute*, esp. p.13–16.

52 For the doubly marked opposition  $/\text{t}' [\text{t}^{\text{h}}] : \text{t}' / [\text{t}']$  assumed here see fn.42.

53 Schenkel, *Glottalisierte Verschlusslaute*, p.52.

54 Only references to those evidence not mentioned in the evidence list are given here. O[ld ]Eg[yptian], M[iddle ]Eg[yptian], L[ate ]Eg[yptian], Demot[ic], O[ld ]Copt[ic], Copt[ic].

55  $\text{ⲧⲟⲃⲗ}$ : Osing, *Papyrus BM 10808*, p.89f, 106.  $dp(e)^{\circ}$ : EDG 626. There also seems to be a demotic gloss  $dp [\text{t}'VpV]$  'to stitch' (LEg. Hieratic  $dp(j)^{\circ}$  (?), trad.  $tp(j)^{\circ}$ )  $>$   $^{\text{S}}\text{ⲧⲟⲡ}$ ,  $^{\text{SB}}\text{ⲧⲟⲡ}$  to hieratic  $\overset{\circ}{\text{t}}$  in a papyrus from Tebtunis, of which only the determinative is well preserved (Osing, *Tebtunis I*, p.91f; Vycichl, *Dictionnaire*, p.219).  $\text{ⲧⲟⲡ}$ : See fn.32.

56 Compare Fecht, *Wortakzent*, §67 with fn.120.  $db(y)$ : EDG 321f. Copt.: Vycichl, *Dictionnaire*, p.211, 165, 219.  $\text{ⲧⲟⲘ}$ : Osing, *Nominalbildung*, p.713. For  $\text{ⲧⲟⲘ}$  and the archaic pronunciation  $[\text{b}]$  of  $\text{ⲃ} / \beta$  in word-final position in Bohairic see Peust, *Phonology*, p.134 and 136.

- ⲓⲓⲓ MEG. \*/t'a:'pɛ:/ \*'head (& neck?)'  
 > LEG. \*/t'a:'pɛ:/ (possible var. ⲓⲓⲓ ⇒ [t'a:'bɛ:f], see evidence 12)  
 > Neo-MEG. ⲓⲓⲓ reanalyzed as \*(t)<sup>2</sup>a:'pɛ:/ with definite article  
 > Rom. Demot. ⲉⲃⲏⲓ (t-)ⲉⲡⲉⲛⲓ \*/(t)a:'pɛ:/ 'head'  
 > Copt. <sup>B</sup>(ⲧ)ⲁⲫⲉ / (t)a'pɛ/ [(t)a'p<sup>h</sup>ɛ]~<sup>SAL</sup>(ⲧ)ⲁⲫⲉ~<sup>F</sup>(ⲧ)ⲁⲫⲏ. <sup>57</sup>

- ⲓⲓⲓ OEG.–LEG. \*/t'Vp/ 'upon'  
 > Neo-Meg. \*/t'p/ (probably var. ⲓⲓⲓ in compound *tp-sw-10-nb*)  
 > Demot. †.

- ⲓⲓⲓ OEG. \*/t'V:'pij/ '(being) upon'  
 > MEG.–LEG. ⲓⲓⲓ \*/t'V:'pɛ(j)/ (fem. crypt. ⲓⲓⲓ \*/t'V'pɛ/) <sup>58</sup>  
 > Neo-MEG. (4th century BCE) \*/t'V'pɛ/ (var. pl. ⲓⲓⲓ \*/t'V'pɛwɣV/)  
 > Neo-MEG. \*/tV'pɛ/ (var. fem. ⲓⲓⲓ \*/tV'pɛ/, pl. ⲓⲓⲓ \*/tV'pVwɣV/)  
 OCopt. \*\*/t'pɛ/ (var. in ⲧⲃⲁⲓ(ⲧⲱⲮ) [t'ɔæj(t'ow)], fem. ⲧⲉⲡⲓⲉ [təp'jɛ],  
 probably in compound ⲧⲡⲣⲟⲕ [t'p'rɔk])  
 > Copt. <sup>SL</sup>ⲧⲡⲓⲉ /tɛ/, <sup>58</sup>

and the variant of the latter

- ⲓⲓⲓ OEG. \*/t'V:'pij/, stat.pron. \*/t'Vp'jVK/ (rare var. ⲓⲓⲓ) 'first'  
 > MEG.–LEG. ⲓⲓⲓ \*/t'V:'pɛ(j)/ <sup>59</sup>  
 > Early Neo-MEG. \*/tV:'pɛ/ (one var. ⲓⲓⲓ from 9/8th century)  
 > Neo-MEG. \*/tV:'pɛ/ (var. ⲓⲓⲓ; var. [tV:'bɛ]: 'sportive' var. ⲓⲓⲓ \*/tV:'bV/)  
 > Rom. Demot. \*/tV'pɛ/ (var. ⲓⲓⲓ)  
 > Copt. †. <sup>59</sup>

'head' (stressed; m.)	t'ap	.....	t'ap	.....	t'ap/' t'ɔp~ t'ɔb	.....	†
'head' (unstressed; m.)	t'ap	.....	t'ɔp	.....	(t <sup>(s)</sup> ɔp) .....	(t <sup>(s)</sup> p)	
					t'ɔb	.....	t <sup>(s)</sup> ɔb~t <sup>(s)</sup> β
'upon' (prep.)	t'Vp-	.....	t'ɔp-	.....	(t <sup>(s)</sup> ɔp-) .....	†	
'on top'~'first' (m.)	t'V:'pij	.....	t'V:'pɛj-	.....	(t <sup>(s)</sup> ɔ'pɛj-) ...	(tɔæj-) ...	†
					t'V:'pɛ:	.....	t <sup>(s)</sup> V:'pɛ:~t <sup>(s)</sup> V:'bɛ: ..
					tɔ'pɛ:	.....	'tɛ
'on top'~'first' (f.)	t'Vp'jit	.....	t'Vp'jɛ	.....	(t <sup>(s)</sup> Vp'jɛ) ...	(təp'jɛ) ...	†
					t'V'pɛ	.....	t <sup>(s)</sup> V'pɛ .....
					tɔ'pɛ	.....	'tɛ
'upper (body?)'>'head' (f.)			t'a:'pɛ~t'a:'bɛ	.....	(t) <sup>2</sup> a:'pɛ	.....	(t)a:'pɛ
					(t)a'p <sup>h</sup> ɛ	.....	

57 *pe*<sup>s</sup>: EDG 59. ⲁⲫⲉ: Vycichl, *Dictionnaire*, p.14. For the later initial vowel and the development of /ɣV/ > earlier Demot. /ʕa/ > later Demot. /a:/ > Copt. ⲁ /a/, and for /ʕa(:)/ > ⲁ(~ⲉ) see Peust, *Vortonvokale*, esp. p.70f, 73; id., *Phonology*, p.102f, 149.

58 Osing, *Nominalbildung*, p.311, 313, 634f, 798f. ⲧⲃⲁⲓⲧⲱⲮ: Spiegelberg, *Koptische Kleinigkeiten*, p.133. ⲧⲉⲡⲓⲉ: Osing, *Papyrus BM 10808*, p.116. ⲧⲡⲣⲟⲕ: *Ibid.*, p.74. ⲧⲡⲓⲉ: Westendorf, *Handwörterbuch*, p.239. Copt.: Vycichl, *Dictionnaire*, p.221, 218. Haardt (*Versuch einer Altkoptischen Grammatik*, p.32–35) argues that OCopt. ⲃ can correspond to [v] or [b].


59 Demot. var.: EDG 321f.

Especially in light of the evidence from the Books of the Netherworld, we can conclude that apart from uses as determinatives the signs  $\text{𓄀}$  and  $\text{𓄁}$  corresponded to *dp* /*t'(V)p*/ or *dpj > dpī* /*t'(V)p(V)(j)*/ respectively in Middle Egyptian and there are some hints in the Pyramid Texts (compatibility restrictions, a possible spelling  $\overline{\text{𓄀}}$ , and alliterations) that this was already the case in Old Egyptian.




List of evidence ...<sup>60</sup>  
... for a spelling *tp*

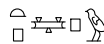
- (1) Spelling variant on a block statue of Nesper-Amun (reign of Sheshonq III[a?]; 9/8th century BCE):

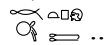
 *hm-ntr-Jmn-R<sup>c</sup> (n)zw-ntr.(w)*<sup>†</sup>  
*(jmi-)3bd(=f)<sup>3</sup>-Jmn-R<sup>c</sup> hr<sup>1</sup>-z<sup>3</sup> tp(i) Ns-r-Jmn—m<sup>3</sup>c-hrw*  
‘Prophet of Amun-Râ King of the Gods, month-priest of Amun-Râ in the First Phyle,  
Nesper-Amun—justified’ (DZA 31.049.170; CG 42221: Legrain, *Statues et statuettes*, p.48 [c])

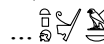
- (2) Spelling variant on the pyramidion of Nesmin (30th dynasty[?]; 4th century BCE):


 *hm-ntr tp(i) n(i)-Jni-hr(j).t*<sup>†</sup> ‘First Prophet of Onuris’  
(DZA 31.045.420; A[vignon] 30: De Meulenaere, *Pyramidions d’Abydos*, p.9f, pl. IV)

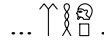
- (3 a–o) Spelling variants on Graeco-Roman temples (Graeco-Roman period; 3rd century BCE–1st century CE):


 *tp(i)-Hr(w)-pw* ‘He is the first of Horus.’  
(DZA 28.037.250: Clère, *Porte d’Évergète*, pl.3, Chons temple, reign of Ptolemaios III Euergetes)

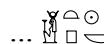
 *mh<sup>of</sup> tp<sup>of</sup>=1* ‘Garlanded is your head, ...’  
(DZA 30.990.060: Junker, *Pylon Philä*, p.250f, Philae temple, reign of Ptolemaios VI Philometor)


 *tp<sup>n</sup> n(i)-ntr-nb* ‘... head of every god ...’  
(Brugsch, *Matériaux*, p.49, id., *Wörterbuch IV*, p.1535): Sauneron, *Esna II*, No.16.2; Ptolemaic Period)


 *tp(j).w-c(w)*<sup>†</sup> ‘... ancestors ...’  
(Brugsch, *Matériaux*, p.50; *PM VI*, 230 (253), Philae temple, reign of Ptolemaios VIII Euergetes II)

 *m-htp* ‘... in peace ...’  
(Brugsch, *Matériaux*, p.50; Philae temple, Ptolemaic Period)



 *tp<sup>n</sup>-sw-10-nb* ‘... every decade ...’  
(DZA 30.330.400; *PM VI*, 230 (254), Philae temple, reign of Ptolemaios VIII Euergetes II)


 *nb.(t)-tp-sw-10-nb* ‘..., mistress of the decade, ...’  
(DZA 31.013.850; *PM VI*, 230 (253), Philae temple, reign of Ptolemaios VIII Euergetes II)


 *tp(j).w-c(w)*<sup>†</sup> ‘...earlier ...’  
(DZA 31.059.110; *PM VI*, 230 (271), Philae temple, reign of Ptolemaios VIII Euergetes II)

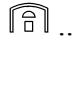
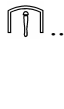
 *(d(d)-mdwt) hrp n=k tp.(t) dmd-r- n.t*  
‘“The White Crown united with the Red Crown is conducted to you ...’  
(DZA 31.076.540; Chassinat, *Mammisi d’Edfou*, p.30.7: reign of Ptolemaios VIII Euergetes II)



60 I am grateful to Günter Vittmann for drawing my attention to the Hebrew *ḥarṭummîm*, as well as to Wolfgang Schenkel, Frank Kammerzell, and Carsten Peust for sharing their opinion on the evidence available with me. Dieter Kurth helped me to verify the evidence from the Edfu temple and kindly shared information of his forthcoming grammar *Einführung ins Ptolemäische* with me. I also wish to thank Joachim Quack and Matthias Müller who pointed out three inexplicable spellings to me that are easy to explain on the basis of the new reading *dp*. I have, however, included only the strongest evidence here.


DZA erroneous , which turned out to be ; *m- ḥtp* ‘... in peace, ...’  
(Brugsch, *Matériaux*, p.50; but see Chassinat, *Temple d'Edfou* VI, p.189 with fn.3)

...  *tp(i) n(i)- [(W)s]r(w)*<sup>61</sup> ‘..., the first of [Os]iris.’  
(DZA 31.052.940: Junker, *Pylon Philä*, p.81f, Philae temple, reign of Ptolem. XII Neos Dionysos)

...  *tp(i) n(i)- (W)sr(w)*<sup>1</sup> ‘..., the first of Osiris.’  
(DZA 31.039.200: Junker, *Geburtshaus Philä*, p.400f, Philae temple, reign of Augustus)

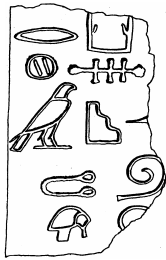
 ... (var.  ...) *zh tp(i)* ‘The first hall ...’  
(DZA 31.043.350 [var. 31.043.330]; Dümichen, *Baugeschichte*, pl. 15 [15],  
*PM* VI, 44, 78 (238–247): Dendera temple, reign of Augustus)

DZA erroneous  *tp(.t)- s.t-mshn(.t)*<sup>60</sup>, which turned out to be  
 ! *hnt (so) s.t-mshn*<sup>60</sup> ‘..., at the head of the mammisi.’  
(DZA 31.033.690: but see Junker, *Geburtshaus Philä*, p.186f, Philae temple, reign of Tiberius)



...  *š<sup>c</sup> tp(i) jri wnn.t*<sup>60</sup> ‘... the first initial one, who made what exists, ...’  
(DZA 31.049.450: *PM* VI, 204 [Z] (25), Philae temple, reign of Tiberius)

... for a spelling *tp*


(4) Spelling variant on oil docket (reign of Dewen[?]; 30/29th century BCE):




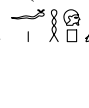
(Petrie, *Royal Tombs* I, pl.XIV.11; see pl. XI.6)

Frank Kammerzell (*Pre-Old Egyptian*, p.x+37, see also p.x+35–x+37, x+46 [table 20-c]) suggests the readings *tp-[(1+x)]* ‘upon [(1+x) jars]’ or *tp[(j)-h<sup>3</sup>.t]* ‘top quality [oil]’. According to Peter Kaplony (*Inschriften der Frühzeit* I, p. 313) one should expect *st(j)-Hr ḥnw(?)*. A possible—though not completely satisfying—reading assigning the  to  *s<t>(j)-Hr(w)* could be ... *st(j)-Hr(w) dp[(i) ...]* ‘Horus-Fragrance, excellent quality [...]’.

(5 a–c) Spelling variants on Graeco-Roman stelae (Graeco-Roman period):

...  ... *H<sup>c</sup>p(i) m- t{t}<p>h(.t)=f* ‘..., Hapi-in-his-cavern, ...’  
(Piehl, *Notes de philologie égyptienne*, p.110: CG 22074, Kamal, *Stèles*, p. 70.6, but see pl. 24)

...  ... *H<sup>(c)</sup>p(i) m- tph(.t)=f* ‘..., Hapi-in-his-cavern, ...’  
(Piehl, *Notes de philologie égyptienne*, p.110: Bouriant, in: *Rec. Trav.* 7, p.122 (7.), *PM* V, 21)

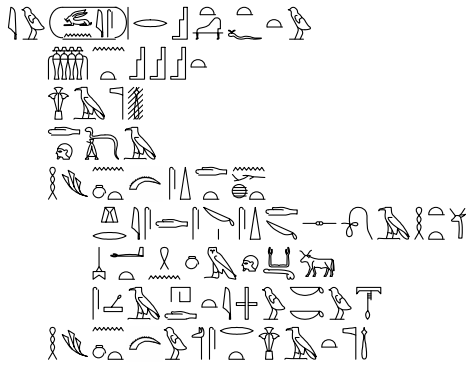
...  ... *H<sup>(c)</sup>p(i) m- tph(.t)=f* ‘..., Hapi-in-his-cavern, ...’  
(Piehl, *Notes de philologie égyptienne*, p.110: Bouriant, in: *Rec. Trav.* 9, p.90 (66.),  
*PM* V, 23 [present position unknown])

The contemporary pronunciation of *tph.t*<sup>61</sup> > *tph(.t)* was most likely /tVphV/.

61 For the reading of the Theonym see Zeidler, *Etymologie des Gottesnamens Osiris*.

... for a spelling *dp*

(6) Pyramid Text 270 (not later than reign of Unas, 24th century BCE):



*jw dWnjs) r- s.t<sup>4</sup>-(j)tj=f-tw*  
*hnt(j)- s.(w)tt*  
*h<sup>3</sup>(j)- ntr<sup>r-c3</sup>*  
*dp db<sup>3</sup>(.w)*  
*hnw.t<sup>~</sup> spd.t(j) nht(.tj)*  
*hrj -s(j) ds<sup>~1</sup> spd<sup>~</sup> zw<sup>3</sup> ht(y).t<sup>†</sup>*  
*wd<sup>c</sup>.t šnw m- dp-k<sup>3</sup><sup>~†</sup>*  
*s.3hd.t jm(j).w- kkw<sup>†</sup>*  
*hnw.t<sup>~</sup> wsr.t h<sup>3</sup>(j).t- ntr<sup>-c3</sup>*

(Sethe, *Pyramidentexte* I, p. 146 [*Pyr.* 270 a–e, W])

‘Unas is heading towards this throne of his father(?), ahead the (other) thrones, behind the ‘Great’ God, the head adorned, a horn sharp and strong—it having a sharp blade that can cut a throat, which can separate a hair(?) from(?) a bull’s head and makes those in the dark shiver—a powerful horn behind the Great God.’

But notice the traditional interpretation (*w*)*dj* *tp*: Sethe, *Kommentar Pyramidentexte* I, p.275–282: ‘mit (wieder)gegebenem Kopfe’ (a *nfr-hr* construction?), Faulkner, *Pyramid Texts*, p.62: ‘whose head is set in place’ ((*w*)*dj* *tp*(=*j*) > (*w*)*dj* *tp*(=*f*)?); Mercer (*Pyramid Texts* I, p.77): ‘with bowed head’ (?).

(7) Pyramid Text 962 (not later than reign of Pepi I, 24th/23rd century BCE):



*dm ds<sup>~</sup>=k - Dhwt(j) -*  
*nšm(.w) mds(.w)<sup>~</sup>*  
*dr dp.(w)t*  
*hsq<sup>~</sup> h<sup>3</sup>t(j).(w)<sup>~†</sup>*

(Sethe, *Pyramidentexte* II, p.37 [*Pyr.* 962 a–b, M])

‘Whet your blade – Thot – so that it may be \*\*keen(?, *hapax*) and sharp(?)! Remove the heads and cut out the hearts!’

See Kammerzell, *Zur Interpretation graphemsprachlicher Varianz*, p. 72.

(8 a–d) Amduat (not later than reign of Hatshepsut,<sup>62</sup> 15th century BCE)

*in standard* → *cryptographic*  
*orthography*

... . . . → . . . . .

**dp.(w)<sup>†</sup>-ntr.(w)<sup>†</sup>** ‘heads of the gods’  
 (Hornung, *Amduat* II, p.477 [6th hour])

(\* . . . ) → . . . . .

**dsr dp** ‘Sacred-of-head’ (a snake’s name)  
 (*Ibid.*, p.442 [5th hour])

... . . . → . . . . .







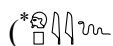

**dp(j).t r<sup>†</sup>** ‘from the mouth’  
 (*Ibid.*, p.435f [5th hour])

... . . . → . . . . .

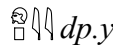

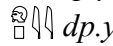
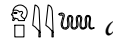
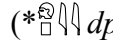


**dp(j).t r<sup>†</sup>** ‘from the mouth’  
 (*Ibid.*, p.438f [5th hour])

62 See fn.34.

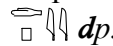
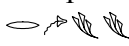
(9 a–j) Netherworld Book on the second shrine of Tutankhamen (not later than reign of Tutankhamen, 14th century BCE):

	→		<b>dp</b> ↔Hr(w)	‘Horus’ head’ (Piankoff&Rambova, <i>Shrines</i> , fig.42 [upper reg., middle])
	→		<b>s.tn̄j dp</b>	‘With-lifted-head’ ( <i>Ibid.</i> , fig.42 [lower reg., middle])
	→		<b>dp</b>	‘head’ ( <i>Ibid.</i> , fig.41 [upper reg., right])
	→		<b>dp.y</b> <sup>uml</sup>	‘(Human) Headed’ (a snake’s name) ( <i>Ibid.</i> , fig.41 [lower reg., left])

See also Darnell, *Enigmatic Netherworld Books*, p.110, 139, 45, 49f, 90, 94f. The name of this snake is spelled with the head in standard orthography and is most likely derived from the word for ‘head’ since it has a human head in all its representations in the Books of the Netherworld:



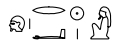



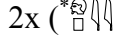

	→		<b>dp.y</b>	(Hornung, <i>Amduat</i> II, 4th hour, p.355, No.279)
			<b>dp.y</b>	(Hornung, <i>Buch von den Pforten</i> I, p.338)
			<b>dp.y</b> <sup>uml</sup>	( <i>Ibid.</i> , p.340)
	→		<b>dp.y</b>	(Piankoff&Rambova, <i>Shrines</i> , fig.41 [l.reg., left])
			<b>dp.yw</b> <sup>uml</sup>	(Piankoff, <i>Création</i> , p.29 with fn. 3)

A special case is the spelling

	→		<b>{r}&lt;d&gt;p.y</b>	(Piankoff, <i>Livre de quererts</i> , pl.149.26)
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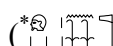
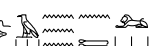
in Petamenophis’ version of the Book of Caverns from the 7th century BCE.

(10 a–d) Book of Caverns (not later than reign of Merenptah, late 13th century BCE):

	→		<b>dp-bʿ</b>	‘head of the bâ’ (Piankoff, <i>Livre de quererts</i> , pl.147.8)
	→		<b>dp-R<sup>c</sup>(w)</b>	‘Râ’s head’ ( <i>Ibid.</i> , pl.79.29)
	→		<b>dp-R<sup>c</sup>(w)</b>	‘Râ’s head’ ( <i>Ibid.</i> , pl.146.5)
<b>2x</b> ( 	→		<b>dp.y</b>	‘(Human) Headed’ (a snake’s name) ( <i>Ibid.</i> , pl.76.3, pl.64.II)

Evidence a) has already been published by Champollion in his *Notices descriptives* and was quoted by Brugsch (*Wörterbuch* VII, p.1318). For the name of this snake see evidence 9 d–j above.

(11) Enigmatic treatise in the tomb of Rameses VI (not later than reign of Rameses VI, 12th century BCE):

	→		<b>dp.w</b> <sup>uml</sup> n(i)- nn(-nī)-ntr.w <sup>uml</sup>	‘heads of these gods’ (Piankoff, <i>Rameses VI</i> , pl.180 [middle reg., middle])
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Darnell, *Enigmatic Netherworld Books*, p.203f.

## (12) New Kingdom spell (Ramesside Period; 13th–12th century BCE):

	$d^{\prime}b^{\prime}.t^{\prime} \approx f$	‘his head’
(DZA 31.367.630, <i>WB</i> V, 434.11; oLeipzig 42; Černý & Gardiner, <i>Hieratic Ostraca</i> I, pl. 91, 1 rt. 1)		
	$tb^n \approx f$	‘his head’
(pBM 10731, vs. 1; Edwards, <i>Kenhikhopshef</i> , pl. 24.2)		
	$tb\langle ? \rangle \approx f$	‘his head’
(oLeipzig 32 = oGardiner 300; Černý & Gardiner, <i>Hieratic Ostraca</i> I, pl. 3, 1 rt. 2)		

A Synopsis of the spell may be found in *KRI* IV, 181f.

(13) Neo-Middle Egyptian–Demotic  $ḥr(i)db$  / $ḥVrVt^{\prime}Vb/$ 

a) Near-homophonic spelling variant (not later than 19th dynasty, 13th century BCE):

MEg.	$(ḥr(i)-ḥ(3)b(t)) ḥr(i)-dp$	‘(lector priest and) chief’
> Neo-MEG.	$ḥr(i)-dp$	‘chief lector priest, chief’
		(Quaegebeur, <i>ḥarṭummîm</i> , p. 167–169)

This phenomenon points to a phonetic shift in one of the phrases  $ḥr-(j)db$  or  $ḥr(i)-dp$ . Either  $ḥr-(j)db$  became / $ḥVr^{\prime}(j)Vt^{\prime}Vp/$  by losing the sonority of the final stop and subsequently coming close to / $ḥV^{\prime}rV(j)-t^{\prime}Vp/$ , or the pronunciation of the final stop in  $ḥr(i)-dp$  became more lax / $ḥV^{\prime}rV(j)-t^{\prime}Vb/$  coming close to / $ḥVr^{\prime}(j)Vt^{\prime}Vb/$ . Looking at the evidence b)–e), the second scenario seems to be more likely. See Quaegebeur, *La désignation (p<sup>3</sup>) ḥry-tp*, p. 392. For / $b > p$ / and / $p > b$ / see Peust, *Phonology*, p. 134f.

b) Cuneiform spelling (reign of Asarhaddon, 7th century BCE):

Neo-M.Ég.	$ḥr(i)dp$ / $ḥV^{\prime}rVt^{\prime}Vb/$	‘chief lector priest, chief’
(→ Hebr.?, see c)		

→ Neo-Assyr.  $\text{ḤUR-DI-BI } ḥarVṭib$  (trad. *ḥarṭibi*) ‘interpreter of dreams’ (*CAD* H, 116)

The signs used can represent different phonological patterns:  $\text{ḤUR} \equiv \text{ḥur} \sim \text{ḥar}$ ,  $\text{DI} \equiv \text{di} \sim \text{de}$ ,  $\text{ṭi} \sim \text{ṭe}$ ,  $\text{BI} \equiv \text{bi} \sim \text{be}$ ,  $\text{pi}$  (Labat, *Épigraphie Akkadienne*, No. 401 [p. 187], 457 [p. 205], and 214 [p. 123]). Vowels can be left unwritten after KVK-signs and the sequence KV-KV can stand for KVK (Streck, *Keilschrift und Alphabet*, p. 83f, 78f).

c) Borrowing into Old Testament Hebrew and Aramaic (not later than 6th century BCE<sup>63</sup>):

Neo-MEG.	$ḥr(i)dp$ / $ḥV^{\prime}rVt^{\prime}Vb/$	‘chief lector priest, chief’
(→ Neo-Assyr.?, see b)		

→ Hebr.  $\sim \text{Mi}j\text{ur} . x ; \sim \sim \text{yMi}j\text{ur} . x ; ḥarṭummîm, \text{yMe}j\text{ur} . x ; ḥarṭummê-$  (pl.) ‘magicians’

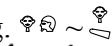
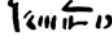

(OT: Genesis 41<sub>8,24</sub>, Exodus 7<sub>11,22</sub>, 8<sub>3,14,15</sub>, 9<sub>11</sub>, Daniel 1<sub>20, 22</sub>; Qumran texts: 4QMyst<sup>b</sup> 1.2.)

63 For the dates of the compilation of these OT books see Kratz, *Komposition der erzählenden Bücher*, p. 285f (Gen 41), 244–246 (Ex 7–9) and esp. the chart on p. 331 (Gen–Reg).


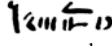


→ Aram. ~jor.x; *ḥarṭom* [Sg.], !yMiJur.x; *ḥarṭummîn* [Pl.] ‘magician’ (OT: Daniel 2<sub>10,27</sub>;  
 Botterweck & Ringgren, *Theologisches Wörterbuch* III, col.189–191; Clines, *Classical Hebrew*,  
 p.316; Koehler & Baumgartner, *Hebräisches und Aramäisches Lexikon*, p.339, 1711.



d) Demotic spellings (Ptolemaic Period):

Neo-MEg.  *hr(i)dp* /hV'rVt'Vb/ ‘chief lector priest, chief’  
 > Demot.  [≡ ] *hrdbi* ‘magician, chief, (lector priest)’ (EDG 321)  
 The length of the sign for the dental stop may point to a reading *d* rather than *t*.  
 Whether there is a graphemic or only a graphic opposition between both signs in  
 the Demotic of the Ptolemaic Period of particular texts is not clear, however. For  
 two possible Demotic renderings *hrbt* see Osing, *Tebtunis* I, p.172 and 201.


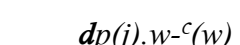
e) Greek transcription (Graeco-Roman Period):

Neo-MEg.  *hr(i)dp* /hV'rVt'Vb/ ‘chief lector priest, chief’  
 > Demot.  (*p*-)*hrdbi* /(*p*<sup>3</sup>)hV'rVt'Vb(V)/ ‘magician, chief, (lector priest)’  
 → Gr. φριτοβ /p<sup>h</sup>ritob/~φριτοβ~φριτβ~φριτωβ /p<sup>h</sup>ritob/  
 (Quaegebeur, *La désignation (p<sup>3</sup>) hry-tp*, p.388f)


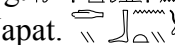
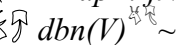
(14) Borrowing into Old Testament Hebrew (not later than 6th century BCE<sup>64</sup>):

MEg.  *dp<sup>i</sup>-ḥw.t* /t'Vp-hV(wV?)/ (WB V, 290.8–18)  
 > LEg. hierat.  *dp<sup>i</sup>-ḥw.t* (fem.) ‘roof’ (Lesko, *Dictionary*, p.80)  
 → Hebr. תאפ'j . *t'pāḥōt* ‘roof’(?) (OT: 1. Kings 7<sub>9</sub>)  
 Koehler & Baumgartner, *Hebräisches und Aramäisches Lexikon*, p.362.  
 See Görg, *Palastbezirk*, p.7–10.

(15) Variant spelling on Naucratis stela (reign of Nectanebos II, 4th century BCE):

 (for ) *dp(j).w-c(w)* ‘the ancestors’  
 (DZA 31.057.850, see Posener, *Notes sur la stèle de Naucratis*, p.146f)


(16) Spelling in Napatan-Egyptian (reign of Nastasen, 4th century BCE):


(\**dp(i) n(i)-c<sub>w</sub>.t* /t'V:'pV(j) nV'ŷV:wV/ ‘best of the livestock’)  
 > LEg.  *dp-n-j'w.t* /t'əp<sup>a</sup>n'ŷu:w/ [t'əp<sup>a</sup>nu:] ‘livestock’ (WB V, 267.4)  
 → Napat.  *dbn(V)* ~  *dbn* /TəbnV/ (WB V, 438.17)  
 (DZA 31.368.730–31.368.760; see Peust, *Das Napatanische*, p.204)  
 (> Copt. <sup>SL</sup>ΤΒΝΗ /tβ'ni/~<sup>A</sup>ΤΒΝΗ~<sup>BF</sup>ΤΒΒΝΗ /t<sup>a</sup>β'ni/ [t<sup>a</sup>β'ni?] ‘livestock, animal’  
 (Westendorf, *Handwörterbuch*, p.223, 545))


For the interpretation of the spelling of the Napatan word see Peust, *Das Napatanische*, p.95, 108. The opposition of emphatic and non-emphatic dentals seems to be neutralized in Napatan Egyptian though (*Ibid.*, p.225). For the Coptic renderings see Peust, *Phonology*, p.134, 135f.

64 See Kratz, *Komposition der erzählenden Bücher*, p.331.

(17 a–b) Spelling variants on Edfu temple (Ptolemaic period; 3rd–1st century BCE):

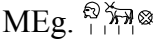
...  ...      *zp db' n(i)- p'wt(i)*      '... the First Time of the primeval age ...'  
 (DZA 31.039.220; Rochemonteix&Chassinat, *Temple d'Edfou* I, p.33.2f, reign of Ptolemaios IV)



...  ...      *mj- z{3}b db'*      '... like at the First Time.'  
 (DZA 31.039.210: Edfu temple, Ptolemaic Period)

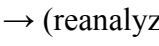
...  ... (2x)      *m- z{3}b db'*      '... at the first Time ...'  
 (Chassinat, *Temple d'Edfou* VI, p.155.3 and 7: reign of Ptolemaios IX Soter II)

The word 'hippopotamus' (*WB* V, 433.14–17 [m. *db*<sup>h</sup> ~ *dbj*<sup>h</sup>, Gr. var. *tp*<sup>h</sup>], 434.1 [f. *db.t*<sup>h</sup>]) was probably pronounced /tV:'bV/ (< /t'V:'bV' / ~ /t'V:'bVt/) in the Ptolemaic period.

(18) Borrowing into Egyptian-Arabic:

MEg.  *dp'-jh.(w)*<sup>10</sup> \* /t'ap-'ju:ħV(w)/      (town name) Aphroditopolis  
 (DZA 11.357.620–11.358.050; *WB* I 120.3f, V 281.15f, 294.12)

> Demot.  [ $\equiv$  ] (*pr'-nb(.t)- dp-jh.(w)*)<sup>12</sup> (*EDG* 627)

> Copt. <sup>S</sup>ⲧⲡⲏⲗ, normally with definite article (Layton, *Coptic Grammar*, §127 b):  
<sup>S</sup>(ⲡⲉ·)ⲧⲡⲏⲗ / (pə)t<sup>(?)</sup>'pɪħ / [(pə)t<sup>(?)</sup>'pɪħ]  
 ~<sup>B</sup>(ⲡⲉ·)ⲧⲡⲉⲗ / (pə)t<sup>(?)</sup>'pɛħ / [(pə)t<sup>(?)</sup>'pɛħ] > [(pə)t<sup>(?)</sup>'bɛħ]  
 → (reanalyzed as / (p-)ət<sup>(?)</sup>'pɪ:ħ/) Eg.-Arab.  *Atfīh*  
 (Vycichl, *Dictionnaire* p. 165; Westendorf, *Handwörterbuch*, p.479, 575)

Compare Fecht's (*Wortakzent*, §§67–69: \* /tapéjj~ħ~w/) and Schenkel's (Glottalisierte Verschlusslaute, p.42: *Pr.w- \*tap.ǐ- ĩ~ħ~w*) different analysis of the MEg. predecessor. For the interpretation of ⲏ see Kammerzell, *Sprachwandel*, capt. 'Zur diachronen Entwicklung des ägyptischen Vokalismus' [p.163]. For the vowel shift and development of the labial in Bohairic see Peust, *Phonology*, p.237 and 91–95.

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