Multi-functional signs; As a characteristic of hieratic In the Roman era

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الملخص:

كان مفهوم "الحياة بعد الموت" إيماناً راسخاً عند المصريين القدماء، وبالتالي، فقد اشتملت كتبهم الدينية على عدد من النصوصو الجنائزية التي تتم تلاوتها اثناء تحضير المتوفى للدفن لتضمن لهم حياة مباركة بعد الدفن. تلك النصوص الجنائزية وردت في العديد من النسخ آخرها "كتاب التنفس" والذي كتبت بعض نصوصة قبل وفاة المتوفى مباشرة او ربما تم كتابتها مسبقاً وإضافة إسم المتوفى في الجزء العلوي منها، ما ادى اي ظهور نوع من الكتابة التجارية والتي يتم فيها كتابة النصوص اسرع من المعتاد مما ادى الي عدم اتقانها لهذا ظهرت مجموعة من العلامات البسيطة والتي كانت تستخدم لاستبدال بعض العلامات المعقدة.

ويهدف هذا البحث الي اظهار دور تلك العلامات كأحد سمات الخط الهيراطيقي في العصر الروماني من خلال دراسة مجموعة من البرديات محفوظة بالمتحف المصري، وجميع البرديات محل الدراسة تنتمي الي كتاب التنفس المعروف بإسم (*šʿ.t n snsns*) والتي يمكن ان تكون مصدر موثق للمساعدة في التحقق من التطور الذي طرئ على الخط الهيراطيقي في القرن الأول الميلادي. وستكون الركيزة الاساسية لهذا البحث هي (العلامات متعددة الإستخدامات) كأحد سمات الخط الهيراطيقي في العصر الروماني.

الكلمات الدالة:

الخط الهيراطيقي– كتاب التنفس– العلامات متعددة الإستخدامات– الدائرة– النقطة– الخط الرأسي المستقيم– الخط الرأسي المتعرج.

Abstract

The concept of “Life after death” was a strong belief for the Ancient Egyptians, therefore; their religious books included a number of funerary texts that were recited during the preparation of a deceased individual for burial; to ensure their blessed afterlife.

These religious texts were mentioned in the “Book of Breathing” and were written right before the death of an individual; sometimes in a hurry; creating a type of commercial writing which may have resulted in texts written faster than required and without mastery. Thus; some of the complex signs may have been replaced by other simply-drawn signs.

This research aims to highlight the hieratic font and its characteristics in the Roman era through a paleographical study of twenty one documents kept in the Egyptian museum.

All of the mentioned documents belong to the "Book of breathing" (*šꜥ.t n snsns*), thus; they can be a reliable source to help verify the evolution that occurred on the hieratic font during the 1st century B.C.

The main focus of this research is to study "**multi-functional signs";** as one of the characteristics of hieratic font used during the Roman era.

Problem:

Researchers have not set a specific description for the multi-functional signs, which can clearly define their uses in hieratic in the Roman era.

Therefore; this study focuses on the following points:

1. The criteria by which a sign can be considered as a multi- functional sign.
2. Application of the aforementioned criteria on a number of signs in order to decide whether they can be considered as multi-functional signs or not; and to highlight some of their uses in the hieratic texts under study.
3. Conclude whether multi-functional signs can be considered one of the features of the hieratic font in the Roman era. This task was conducted through a table that shows the minimum repetition number of these signs in the documents under study.
4. Preparing a set of tables to show the words within which the multi-functional signs were used; and their positions in the examined documents.

Objective

The main objective of this research is to study "**multi-functional signs"** in hieratic font**;** and conclude whether multi-functional signs can be considered one of the characteristics of the hieratic font in the Roman era.

Keywords:

Book of breathing- Hieratic font- Multi functional signs- Circle- Dot- Vertical stroke - Vertical curved line.

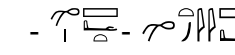
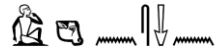
Introduction:

Ancient Egyptians believed in existence of life after death(1); this was clearly reflected in the huge amount of theological ideas that were expressed in their religious books. Beliefs are an expression of human ideological, political and social decoding(2); and because beliefs were the essence of the life of the ancient Egyptian man, they had to be expanded to include everything related to religion, including religious books; which are a group of religious texts that convey the Egyptians' perception of the lives of the dead in "The Other World". These texts also included a number of spells that were recited while preparing the body for burial, to feed the deceased and present offerings to him; in addition to spells that protect him from all evils in the other world; this began with the texts of pyramids(3) and ended with the book of breathing(4).

The "**Book of Breathing**" appeared and developed in the Teyybian region(5) during the Late period (from the twenty six dynasty onwards), it continued to be used parallel to the "Book of the Dead" (*Prt m hrw*) without replacing it(6). But; the book of breathing proceeded throughout the Ptolemaic and Roman periods(7); it is a single funeral text with two copies/parts which had different dates and components(8), the ancient Egyptians themselves were able to distinguish

between the two parts/copies of the book, by adding the sentence (*t3 šʿt snsn mḥ* 1) in the title of the first book, and the sentence (*t3 šʿt snsn mḥ* 2) in the title of the second book[9].

This late funerary ancient Egyptian compositions were concerned only with the afterlife and was derived from the traditional "Book of the Dead". Similar to the "Book of the Dead"; the sole purpose of the late texts was to ensure the blessed afterlife of the deceased individual, who is elevated to the divine status after judgment at the court of Osiris, thereby guaranteed the powers of rejuvenation. These powers; which include mobility, sight, speech, hearing and access to food offerings; are summarized in the term (*snsns*); or "breathing"; which refers to the Egyptian expression (*tʿw n ʿnḫ*) i.e. "breath of life" which is the fundamental characteristic that distinguishes the living from the dead[10]; furthermore; the title (*t3 šʿ.t n snsns*) can be interpreted as follows:

-  (*t3*) definition tool[11].
-  (Sat) means (a piece of writing - a document - a letter - a book)[12].
-  (*n*) (of) of genitive[13].
-  (*snsn*) It is a word derived from the verb (*sn*)[14] which means (inhale- breathe), the ancient Egyptian doubled this verb (*sn*) to emphasize the importance of breathing for the individual in the other world[15].

Most of the documents found in the books of breathing were written in hieratic font; and some in hieroglyphic font[16], while few of the abbreviated documents of the Book of Breathing were written in demotic, such as the Louvre number (N. 3284).

All documents examined in the current study are parts of the "Book of breathing," and all of them were written in the Roman era using the hieratic font. Most of these documents were commercial papery on which the texts were written right before the death of its owner[17]. This method of commercial writing may have forced the scribe to write the texts without mastery and faster than usual, which; in turn; could have compelled him to simplify some signs and may have also led him to replace some complicated signs by other simply-drawn signs.

In addition; there are many hieroglyphic signs which have the same shape in the hieratic font such as(18):

- The sign Q.3 () and the sign N.25 () are almost the same in the hieratic font, as they were drawn ( / ).
- The sign N.35 () and the sign X.1 () are almost the same in the hieratic font, as they were drawn ( / ).
- The sign D.12 () and the sign W.24 () are almost the same in the hieratic font, as they were drawn ( / ).
- The sign T.21 () and the sign O.29 () are almost the same in the hieratic font, as they were drawn ( / ).

The above examples can be considered as similarity in the drawing of two signs which may have happened due to the rapid writing, also; the document could have been written by a beginner; and finally; this could have been the result of the abbreviation and simplification of signs throughout ages(19).

However; what we specifically mean by the "**multi- functional signs"** that they are those signs which had several uses and were easy to draw, so that each sign could be used to simplify or substitute other signs. For example; it was noticed in the documents examined in the current study that it was common to write the sign N.5 (), sign H.8 (), sign Aa.1 (), sign X.1 () and sign N.33 (); as a circle (); and sometimes this circle was drawn in its regular position; for example the sign N.33 () or the sign N.5 () without the center dot; while in other cases it was used as a simplification of other signs due to the rapid writing, as in the case of signs (H.8 and X.1). Therefore; the **circle** is a sign that was easy to drawn and was commonly used as a simplification of other signs, hence; **and under these two conditions; the circle can be considered as a multi-functional sign.**

In the next part of this study, we will discuss this subject in some detail by applying the aforementioned criteria on a number of signs to clarify whether they can be considered as multi-functional signs or not; and to highlight some of their uses in the hieratic texts under study. The signs to be examined are (circle, dot, vertical straight line and vertical curved line) as examples for the multi- functional signs in the hieratic script of the Roman era, noting that the above mentioned signs will be numbered (O.W.1- O.W.2- O.W.3- O.W.4) consecutively.

As mentioned before; the current study will also include two types of tables, **the first** demonstrates the minimum number of repetition of each sign in every document; so that we can determine whether the use of the multi-functional signs is one of the characteristics of the hieratic script in the Roman era; or not. **The second type** contains the words within which the multi-functional signs were used and their positions in the examined documents.

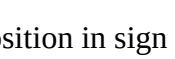
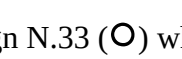
The first sign:

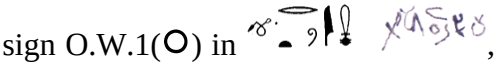
The circle (): (O.W.1) [Gardner (D.12, N.33, S21) / Möller (88/ 329/ 557/ 709)]

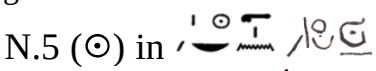
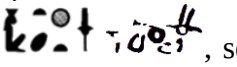
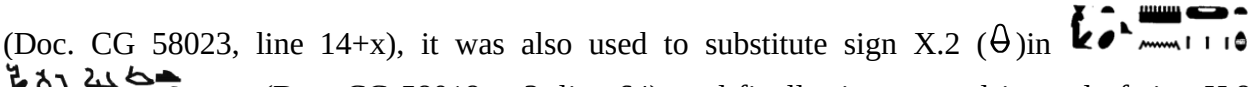
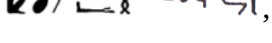
According to "Gardiner's sign list" of common hieroglyphic signs, the signs which were drawn as a circle are (D.12[20], N.33[21], S21[22]), while according to Möller; they are (88[23]/ 329[24] /709[25])**,**

This section of the study will focus on the several uses of this sign, because it was noticed that it had many uses in the studied papyri as follow:

In the document (CG: 58007) the scribe appears to have simplified other signs by substituting them with the circle sign; and sometimes he used it in its original positions as one of the signs (D.12, N.33, S21).

For example; the circle sign was used to simplify the sign H.8 (𓂀) which was drawn as a circle in  , see: (Doc. CG 58007, p.3, line 37); while the circle was used in its original position in sign N.33 (𓁹) which appeared in  , see: (Doc. CG 580007, p.2, line 33).

On the other hand; an example of using the circle as multi-functional sign because of rapid writing as the replacement of signs X.1 (𓎛) with the sign O.W.1(𓁹) in  , see: (Doc. CG 58007, p.3, line 50). Thus; the circle sign can be considered a multi- functional sign because it was utilized for several uses in the same document.

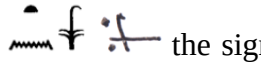
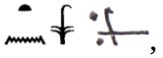
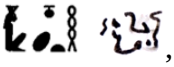
The following are other examples of the several uses of the circle sign in most of the documents which were examined in the current study; it was used as the sign N.5 (𓇋) in  see: (Doc. CG 58010, line 4), it was used to substitute sign A.a.1 (𓏏) in  , see: (Doc. CG 58023, line 14+x), it was also used to substitute sign X.2 (𓎟)in  , see: (Doc. CG 58018, p.3, line 64); and finally; it was used instead of sign H.8 (𓂀) in the word  , see: (Doc. CG 58010, line 4).

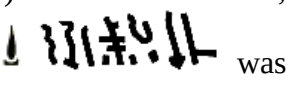
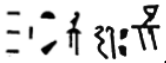
Therefore; and according to all of the above; it is proved that the sign (O.W.1) (𓁹) was used to simplify and substitute several signs in most of the documents in the current study, in addition to using it to substitute several signs in the same document, thus; it can be considered as a **multi-functional sign**.

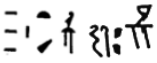
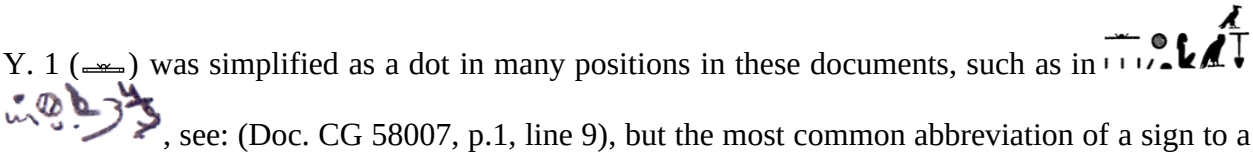
The second Sign:

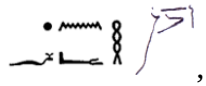
The Dot (𓐍): [Gardiner **(Ff100) /** Möller 695/6]

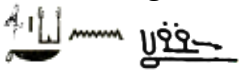
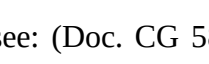
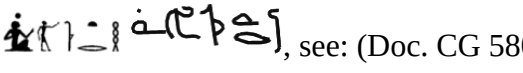
This sign can be considered as a multi- functional sign in hieratic writing during the Roman era because it was observed that it had several uses in the examined documents, as follow:

First: it was used to replace some signs as some kind of abbreviation due to rapid writing, which appeared in many places, for example; in  the sign N.35 (𓈖) was simplified into a dot, see: (Doc. CG 58010, line 6), and in the same line in the same document the dot was used instead of the sign X.1 (𓎛) in  , see: (Doc. CG 58010, line 6), finally; at the end of the same line in the same document, the dot was also used as the sign H.8 (𓂀) in  , see: (Doc. CG 58010, line 6).

Furthermore; the dot sign has appeared as an alternative to the sign Z4A (𓏛) in  , see: (Doc. CG 58008, line 14), also; the sign Z.1 (𓍿) in  was shortened into a dot, see: (Doc. CG 58008, line 18), while the sign N.21 (𓇼) was abbreviated to a dot in  , see: (Doc. CG 58009, p.1, line 3) and in the same word the sign X.1 (𓎛)

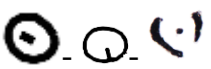
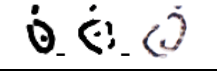
was also simplified as a dot  , see: (Doc. CG 58009, p.1, line 3). Moreover; the sign Y. 1 (𓏛) was simplified as a dot in many positions in these documents, such as in  , see: (Doc. CG 58007, p.1, line 9), but the most common abbreviation of a sign to a dot, is the abbreviation of sign H.8 (𓉐), as this abbreviation can be found in many positions in the documents examined in the current study, such as in  , see: (Doc. CG 58010, line 6).

The second use of the dot that was noticed in the current study is to fill empty spaces; this has appeared in the hieratic writing since the New Kingdom era by using signs like V.1 (𓍹) to fill empty spaces. But in this study; it was noticed that a dot has appeared above several signs in many empty spaces without any linguistic purpose, such as the dot above I.9 (𓆓) in  , see: (Doc. CG 58007, p.5, line 71) and the dot above N.5 (⊙) in  in (Doc. CG 58009, p.1, line 3), so we can assume that the reason of putting dots above signs is to fill empty spaces.

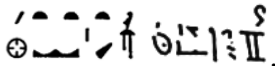
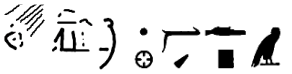
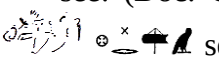
There are many examples for this use of the dot sign which have appeared in many positions, such as the two dots above D.28 (𓂻) in  , see: (Doc. CG 58009, p.4, line 46), the dot above D. 2 (𓁹) in  , see: (Doc. CG 58009, p.5, line 53), the dot above V. 31 (𓍿) in  , see: (Doc. CG 58014, line 13), and finally the dot above A. 1 (𓀀) in  , see: (Doc. CG 58018, p.1, line 2).

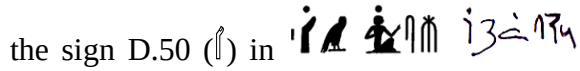
To conclude this point, it must be mentioned that when a dot is used to fill an empty space, it is always; and only; placed above other signs.

The third use of the dot in the current examined documents is to differentiate between the signs, the following table shows the popular shapes of signs {N.5 (⊙)- O.49 (⊗) and D.50 (𓎛)- T.14 (𓎡)}:

Hieroglyphic sign	Hieratic Signs	Hieroglyphic Sign	Hieratic Signs
N.5 (⊙)		D.50 (𓎛)	
O.49 (⊗)		T.14 (𓎡)	

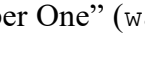
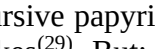
As demonstrated in the previous table; the first case of differentiation is between sign N.5 (⊙) and O.49 (⊗), this case has clearly appeared in the presence of the dot above the sign O.49

(⊗) in  , see: (Doc. CG 58009, p.2, line 12), the dot may have appeared in this word due to the presence of the determinative O.49 (⊗) which is similar to the familiar form () of sign N.5 (⊙), so in order for the scribe to differentiate between the two signs, he drew a dot above the determinative O.49 (⊗). This is not the only case observed in this study; but it has also commonly appeared in many positions, such as in  see: (Doc. CG 58009, p.3, line 34), the same has appeared in other documents such as in  see: (Doc. CG 58017, line 6). All these cases induced the researcher to contemplate the use of the sign O.W.2 -the dot- as a tool to differentiate between signs.

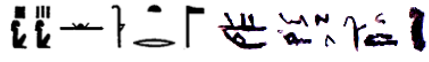
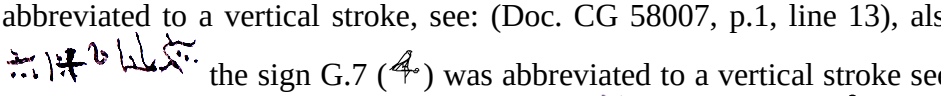
The second case that proves the use of the dot to differentiate between two sigs is its appearance above the sign D.50 () in  , see: (Doc. CG 58036, p.2, line 104) which suggests that it may have been used to differentiate between this sign and the sign T.14 ().

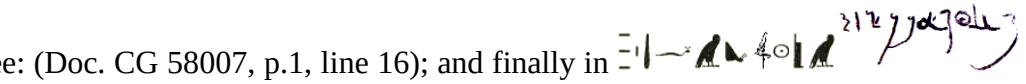
The third Sign:

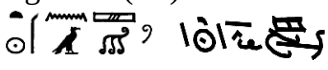
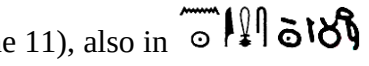
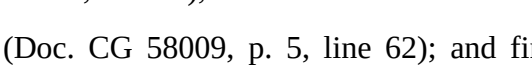
Vertical stroke (): (O.W.3) [Gardiner **(Ff8A) /** Möller 558- 614]

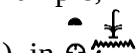
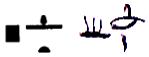
It is clear for every philologist working on the paleography of hieratic signs that there are some signs which were written in the shape of a vertical stroke, such as the sign Z.1 (𓏺)[26] which appeared in Möller's list as the sign number 558 ()[27] and the vertical stroke that represents "Number One" (wa) which appeared in Möller's list as the sign number 614 ()[28], also; in cursive papyri the signs () after cartouches are indicated by four; or even five and six; strokes[29]. But; in the following paragraphs we will discuss the other uses of the vertical stroke (O.W.3), as a multi- functional sign in hieratic writing during the Roman era.

In addition to the previously mentioned uses of the vertical stroke, it was also used in the Hieratic font during the Roman era to substitute other signs, sometimes for abbreviation and other times because of rapid writing, that is why the vertical stroke can be considered a multi-functional sign,

The first purpose of use as mentioned above was for abbreviation, which can be noticed in the substitution of the (tall narrow signs)[30] with vertical strokes, this case appeared in the same documents several times, for example in  , the sign R.8 () was abbreviated to a vertical stroke, see: (Doc. CG 58007, p.1, line 13), also; in  the sign G.7 () was abbreviated to a vertical stroke see: (Doc. CG 58007, p.1, line 15), moreover; in , the sign V.28 () was abbreviated to a vertical

stroke, see: (Doc. CG 58007, p.1, line 16); and finally in  the sign S.43 () was abbreviated to a vertical stroke as well, see: (Doc. CG 58007, p.5, line 71).

Also the case of abbreviation of the (Tall narrow signs) as vertical strokes was commonly observed in most of the documents examined in this study, such as in  , the sign G.7 () was abbreviated to a vertical stroke, see: (Doc. CG 58008, line 10), as well as in  , the abbreviation of sign T.14 () to a vertical stroke see: (Doc. CG 58008, line 11), also in  the sign M.17 () was abbreviated to a vertical stroke see: (Doc. CG 58009, p. 5, line 62); and finally in  the sign M. 4 () was abbreviated as a vertical stroke see: (Doc. CG 58016, line 8).

The second purpose of use was to substitute signs with a vertical stroke due to rapid writing as mentioned before, and as a proof of this; it was found that the scribe used to replace the (Low narrow signs)[31] with vertical strokes, this case has commonly appeared in the current study, for example; in  , the abbreviation of sign V.1 () to a vertical stroke see: (Doc. CG 58012, line 5), in , the abbreviation of sign X.1 () to a vertical stroke see: (Doc. CG 58031, p.3, line 16), and in  the sign X.1 () was abbreviated to a vertical stroke see: (Doc. CG 58031, p.3, line 17).

The fourth Sign:

Vertical Curved line (): (O.W.4) [Möller 80-196-562- 585]

As in the case of the vertical stroke sign; every philologist working on the paleography of hieratic signs must have clearly observed that there are some signs written as vertical curved lines, such as the sign D. 2 ()[32]; sign number 80 in Möller's list; which was written as a curved line (see the below table), as well as the signs G.17 ()[33], M.28 ()[34], Z.3 ()[35] and T.34 ()[36]; also the vertical curved line was used to represent the ligature; the following table shows examples.

 (37)	 (38)	(39)	(40)	(41)	(42)
D.2 () N.K	**D.2 () L.P**	**G.17 () N.K**	**G.17 () L.P**	**M.27 () N.K**	**M.27 () L.P**
(43)	(44)	(45)	(46)	(47)	
Z.3 () N.K	**Z.3 () L.P**	**M.28 () N.K**	**M.28 () L.P**	**G.20 () N.K**	

The following paragraphs explore the other uses of the vertical curved line – which number is O.W.4 in the current study- as a multi- functional sign in the hieratic writing during the Roman era.

The First use of the vertical curved line was to simplify other signs, this was the case since the New kingdom era, as the vertical curved line was used as an abbreviation to many signs, an example for this has surfaced in this study, which is the abbreviation of the sign E.1 () which appeared as () in , see: (Doc. CG: 58009, P. 5, Line 56).

The second use of the vertical curved line in the hieratic font during the Roman era was originally an old use, but it was widely pursued in this era; which is the Ligature. In the current study, the vertical curved line was found to be commonly used to represent Ligature, this can be considered as one of the characteristics of the hieratic font during the Roman era; the following table shows examples for this use found in three documents:

ligature of (G. 38) and (X. 1)[48]	ligature of (Z. 4) and (Y. 1)[49]	ligature of (Z. 4) and (X. 1)[50]	Ligature of(V. 1) and (Z. 4)[51]
			
			

The first example; the sign O.W.4 (the vertical curved line) appeared as () which represents the Ligature between sign G.38 () and sign X.1 (), see: (Doc. CG: 58007, P. 1, Line 19), while in the second example, the scribe wrote the sign O.W.4 as () to represent the Ligature between sign Z.4 () and sign Y.1 (), see: (Doc. CG: 58009, P. 1, Line 9).

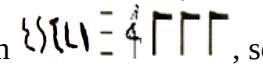
The third example shows the sign O.W. 4 as a vertical line with a slight curve at its middle; making its shape closer to an arc (); as a Ligature between sign Z.4 () and sign X.1 (), see: (Doc. CG: 58010, Line 3). Finally; the fourth example shows the sign O.W. 4 as a Ligature between sign V.1 () and sign Z.4 (), see: (Doc. CG: 58010, Line 12).

According to the examples mentioned above; the wide use of the Ligature in the Roman era is very obvious, also, the sign O.W.4 was usually used to represent this Ligature, which may have happened due to the commercial use of such papyri, forcing the scribe to write the texts without mastery; as mentioned earlier.

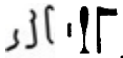
The third use of the sign O.W.4 is to substitute other signs; in this context, the following seven examples are listed to demonstrate that the sign O.W.4 was used to substitute several signs.

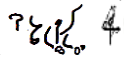
1- sign F. 25 () in , see: (Doc. CG: 58009, P. 2, Line 17).

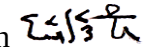
2- Sign V. 1 () in  , see: (Doc. CG: 58009, P. 5, Line 61).

3- Sign G. 7 () in  , see: (Doc. CG: 58010, Line 9).

4- Sign Y. 1 () in  , see: (Doc. CG: 58011, Line 1).

5- Sign U. 36 () in  , see: (Doc. CG: 58012, Line 1).

6- Sign M. 17 () in  , see: (Doc. CG: 58013, Line 2).

7- Sign N. 21 () in  , see: (Doc. CG: 58014, Line 4).

As shown above; the sign O.W.4 (the vertical curved line) was used to substitute several signs, even tall narrow signs (sign U. 36 () in example number 5) and low narrow signs, sign V. 1 () and N. 21 () in examples number (2 & 7) respectively).

Sign	Number of repetition in each document[52]										
	CG 58007	CG 58008	CG 58009	CG 58010	CG 58011	CG 58012	CG 58013	CG 58014	CG 58015	CG 58016	
	11	12	10	5	0	7	1	1	0	0	
	CG 58017	CG 58018	CG 58019	CG 58020	CG 58021	CG 58022	CG 58023	CG 58028	CG 58031	CG 58034	CG 58036
	2	11	0	1	0	1	4	0	14	6	10
Sign	CG 58007	CG 58008	CG 58009	CG 58010	CG 58011	CG 58012	CG 58013	CG 58014	CG 58015	CG 58016	
	11	13	13	13	0	8	2	4	1	0	
	CG 58017	CG 58018	CG 58019	CG 58020	CG 58021	CG 58022	CG 58023	CG 58028	CG 58031	CG 58034	CG 58036
	3	10	1	5	2	0	2	1	9	6	7
Sign	CG 58007	CG 58008	CG 58009	CG 58010	CG 58011	CG 58012	CG 58013	CG 58014	CG 58015	CG 58016	
	11	12	12	9	2	10	3	10	4	3	
	CG 58017	CG 58018	CG 58019	CG 58020	CG 58021	CG 58022	CG 58023	CG 58028	CG 58031	CG 58034	CG 58036
	9	18	7	2	1	0	1	2	10	13	10
Sign	CG 58007	CG 58008	CG 58009	CG 58010	CG 58011	CG 58012	CG 58013	CG 58014	CG 58015	CG 58016	
	14	12	12	10	1	10	6	6	3	5	
	CG 58017	CG 58018	CG 58019	CG 58020	CG 58021	CG 58022	CG 58023	CG 58028	CG 58031	CG 58034	CG 58036
	1	11	10	2	2	1	3	1	2	8	4

Conclusions:

1- The multi-functional signs are signs that could be easily drawn; therefore; they could be used to replace many other signs.

2- The speed writing and commercial purposes of hieratic funerary texts are among the most important reasons that led to the existence and spread of multi-functional signs in hieratic script during the Roman era.

3- The multi-functional signs have many uses, but their uses which were noticed within this research are (abbreviation of the signs which were complex to draw, differentiation between signs, filling the empty spaces, ligature).

4- The four signs (O.W.1- O.W.2- O.W.3- O.W.4) on which the research was applied are all multi-use signs.

5- It is clear that multi-functional signs are repeatedly used in most of the papyri under study, therefore this feature can be considered as one of the characteristics of the hieratic script in the first century AD.

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***-** Research extracted from a master's thesis in preparation with the title "A Paleographical study of the Hieratic signs in the Roman period applied on a collection of Papyri kept in the Cairo Museum" under supervision of Prof. Dr. Ola El Aguizy. Student counter, Wael El-Assaly, Faculty of Archeology, Cairo University.

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52. This table represents the minimum repetition number of the multi- functional sign in the documents examined in this study.

Tables

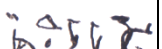
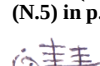
Circle (○): [Gardner **N. 33 /** Möller 88/329/ 557/ 709]

Hieroglyphic Signe	CG 58007	CG 58008	CG 58009	CG 58010	CG 58011	CG 58012	CG 58013	CG 58014	CG 58015	CG 58016
○	 as (N. 33) in p.2;L.33  as (H.8) in p.3;L.37  as (H.8) in p.3;L.39  as (H.8) in p.3;L.43  as (H.8) in p.3;L.45  as (H.8) in p.3;L.47  as (X.1) in p.3;L.50  as (H.8) in p.3;L.50  as (H.8) in p.4;L.60  as (H.8) in p.4;L.61	 as (H.8) in L.5  as (H.8) in L.7  as (N. 33) in L.8  as (H.8) in L.8  as (H.8) in L.13  as (Aa.1.8) in L.16  as (H.8) in L.24  as (N.5) in L.24  as (N. 33) in L.33  as (N. 33) in L.34 as (Aa.1.8) in L.38	 as (H.8) in p.1;L.2  as (N. 33) in p.1;L L.5  as (H.8) in p.2; L.12  as (Aa.2) in p.2; L.14  as (H.8) in p.3; L.34  as (H.8) in p.4; L.43  as (H.8) in p.4; L.50  as (N.5) in p.5; L.52  as (N.5) in p.5; L.64	 as (H.8) in L.2  as (H.8) in L.4  as (N.5) in L.4  as (X.1) in L.9  as (H.8) in Verso		 as (H.8) in L.2  as (H.8) in L.2  as (H.8) in L.7  as (H.8) in L.9  as (H.8) in L.17 as (N.5) in L.18 as (Y.1) in L.201	as (O.49) in L.2	as (X.1) in L.11		

Circle (○): [Gardner **(N. 33)** / Möller 88]

hic	CG 58017	CG 58018	CG 58019	CG 58020	CG 58021	CG 58022	CG 58023	CG 58028	CG 58031	CG 58034	CG
	 as (N.5) in L.5	 as (H.8) in p.1;L.2  as (N. 33) in p.1;L.8  as (H.8) in p.2;L.11  as (H.8) in p.1;L.18  as (O.49) in p.2;L.24  as (N.5) in p.2;L.24  as (H.8) in p.2;L.29  as (N. 33) in p.3;L.53  as (N.5) in p.3;L.60  as (X.2) in p.3;L.64		 as (H.8) in L.1		 as (O.49) in L.7	 as (H.8) in L.7  as (H.8) in L.7  as (N.5) in L.19+x		 as (N.5) in p.1;L.3  as (Aa.1) in p.1;L.4  as (H.8) in p.2;L.9  as (N.5) in p.2;L.10  as (O.49) in p.3;L.15  as (H.8) in p.3;L.16  as (N.5) in p.4;L.27  as (O.49) in p.5;L.44  as (O.49) in p.6;L.55  as (N.5) in p.8;L.70	 as (Aa.1.8) in L.6  as (N.5) in L.13  as (N.5) in L.21  as (H.8) in L.21  as (H.8) in L.21  as (H.8) in L.21	  as (H.      

Dot (•): [Gardner (Ff8A)]

hic	CG 58007	CG 58008	CG 58009	CG 58010	CG 58011	CG 58012	CG 58013	CG 58014	CG 58015
	 as (Y. 1) in p.1; L.9	 as (dot) over (N.5) in L.4	 as (dot) over (N.5) in p.1; L.3	 as (X. 1) in L.2		 as (dot) over (N.5) in L.3	 as (H. 8) in L.9	 as (dot) over (I.8) in L.2	 as (Oblique) in L.14
	 as (dot) under (Y. 1) in p.1; L.12	 as (dot) over (N.5) in L.6	 as (N. 21) in p.1;L.3	 as (X. 1) in L.2		 as (dot) over (O.49) in L.4	 as (H. 8) in L.14	 as (dot) over (I.8) in L.5	
	 as (X. 1) in p.3; L.37	 as (dot) over (I.9) in L.8	as (X. 1) in p.1;L.3	 as (X. 1) in L.2		 as (dot) over (O.49) in L.8		 as (dot) over (I.8) in L.5	
	 as (X. 1) in p.3; L.45	 as (dot) over (D.2) in L.11	 as (dot) over (N.5) in p.1; L.9	 as (H. 8) in L.2					
	 as (dot) over (N.5) in p.3; L.40	 as (Z.4) in L.14	 as (dot) over (O.49) in p.2; L.12	 as (Z. 4) in L.2					
	 as (X. 1) in p.4; L.52	as (dot) over (N.5) in L.15	as (dot) over (N.5) in p.2; L.20	as (X. 1) in L.3		 as (dot) over (I.8) in L.11		 as (dot) over (v.31) in L.13	
	 as (X. 1) in p.4; L.60	 as (X. 1) in L.18	 as (Ff8A) in p.3;L.33	 as (X. 1) in L.5		 as (Z. 1) in L.14			
				as (N. 35) in L.6		as (Y.1) in L.19			
	as (H. 8) in p.5; L.64	as (dot) over (N.5) in L.21	as (X. 1) in p.5; L.52	as (D. 46) in L.7					
	as (Z4) in p.5; L.69	as (X. 1) in L.28	as (dot) over (D.2) in p.5; L.53	as (X. 1) in L.8					
		as (X. 1) in L.35	as (Z4A) in p.5;L.65	as (X. 1) in L.9					

Dot (•): [Gardner **(Ff8A)]**

oglyphic igne	CG 58017	CG 58018	CG 58019	CG 58020	CG 58021	CG 58022	CG 58023	CG 58028	CG 58031	CG 58034	CG 5803
	as (X. 1) in L.3	as (dot) over (N.5) in p.1; L.1	as (X. 1) in L.9	as (X. 1) in L.1	as (dot) over (V. 31) in frag. C; L.3		as (Y. 1) in L.6+x	as (dot) over (I. 9) in L.5	as (dot) over (A.1) in p.1; L.3	as (dot) over (N.5) in L.1	
		as (dot) over (A.1) in p.1; L.2							as (dot) over (N.5) in p.2; L.10	as (dot) over (N.5) in L.1	
	as (dot) over (o.49) in L.8	as (dot) over (N.5) in p.1; L.5		as (dot) over (Z. 9) in L.1	as (Y. 1) in frag. C; L.3		as (Z. 1) in L.18+x		as (dot) over (A.1) in p.2; L.10	as (N. 33) in L.2	

	as (X. 1) in L.9	as (dot) over (O.1) in p.1; L.12 as (X. 1) in p.1;L.18 as (X. 1) in p.2;L.27 as (dot) over (A.1) in p.1; L.42 as (dot) over (A.1) in p.1; L.44 as (Z.4) in p.1; L.69		as (X. 1) in L.1 as (X. 1) in L.1 as (X. 1) in L.9					as (X. 1) in p.3; L.15 as (X. 1) in p.3; L.16 as (X. 1) in p.5; L.43 as (X. 1) in p.5; L.50 as (X. 1) in p.7; L.62	as (X. 1) in L.2 as (dot) over (N.5) in L.8 as (X. 1) in L.8	as over (in p.4; as over (in p.4; as over (I in L

Vertical straight line (𓏏): (O.W.3)

eroglyphic Signe	CG 58007	CG 58008	CG 58009	CG 58010	CG 58011	CG 58012	CG 58013	CG 58014	CG 58015	CG 58016
	as (R. 33) in p.1; L.13 as (G. 7) in p.1; L.15 as (Z. 1) in p.2; L.20 as (G. 7) in p.2; L.24 as (Z. 1) in p.3; L.38 as (Z. 1) in p.5; L.67	as (Z. 1) in ; L.7 as (Z. 1) in ; L.7 as (Ff301) in ; L.9 as (T.14) in ; L.11 as (G.7) in ; L.12 as (G.7) in ; L.13 as (Z. 1) in ; L.22 as (M. 17) in ; L.24	as (Z. 1) in p.1; L.2 as (Z. 1) in p.1; L.3 as (Z. 1) in p.2; L.14 as (G. 7) in p.2; L.22 as (Z. 1) in p.3; L.28 as (Z. 1) in p.4; L.45 as (Z. 1) in p.5; L.51	as (G.7) in ; L.2 as (Z. 1) in ; L.2 as (Z. 1) in ; L.4 as (Z. 1) in ; L.8 as (G.7) in ; L.9 as (G.7) in ; L.10 as (G.7) in ; L.11	as (Z. 1) in ; L.2 as (Z. 1) in ; L.2	as (Z. 1) in ; L.1 as (G.7) in ; L.2 as (V. 1) in ; L.5 as (G.7) in ; L.7 as (Z. 1) in ; L.11 as (Z. 1) in ; L.17	as (Z. 1) in ; L.2 as (Z. 1) in ; L.8	as (G.7) in ; L.2 as (Z. 1) in ; L.3 as (Z. 1) in ; L.3 as (Z. 1) in ; L.5 as (Z. 1) in ; L.11 as (Z. 1) in ; L.11	as (Z. 1) in verso; L.1 as (V. 28) in verso; L.2	as (M.4) ; L as (Z. 1) verso; L as (Z. 1) verso; L

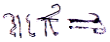
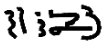
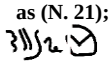
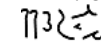
	 as (S. 34) in p.5; L.71	 as (G.7) in ; L.31	as (M. 17) in p.5; L.62			 as (Z. 1) in ; L.19		 as (Z. 1) in ; L.13	

Vertical straight line (𓏺): (O.W.3)

hic	CG 58017	CG 58018	CG 58019	CG 58020	CG 58021	CG 58022	CG 58023	CG 58028	CG 58031	CG 58034	CG
	as (Z.1) in L.1 as (Z.1) in L.2 as (Z.1) in L.3 as (G.7) in L.4 as (Z.1) in L.3 as (Z.1) in L.6 as (Z.1) in L.7 as (Z.1) in L.9	as (Z. 1) in p.1; L.1 as (G. 7) in p.1; L.8 as (Z. 1) in p.1; L.12 as (G. 7) in p.1; L.21 as (G.7) in p.2; L.25 as (Z. 1) in p.2; L.31 as (V. 1) in p.3; L.56 as (S. 43) in p.3; L.68	as (Z.1) in L.2 as (Z.1) in L.6 as (Z.1) in L.10 as (Z.1) in L.10 as (Z.1) in L.10 as (Z.1) in L.11 as (Z.1) in L.12	as (V.27) in L.3 as (Z.1) in L.3	as (Z.1) in Fr.a; L.2		as (Z.1) in L.10+ x	as (Z.1) in L.3 as (Z.1) in L.5	as (R. 8) in p.1; L.2 as (Z. 1) in p.1; L.5 as (Z. 1) in p.2; L.10 as (Z. 1) in p.2; L.12 as (G.7) in p.3; L.15 as (X. 1) in p.3; L.16 as (X. 1) in p.3; L.17 as (Z. 1) in p.7; L.61 as (Z. 1) in p.11; L.89	as (G.7) in ; L.1 as (Z.1) in ; L.2 as (Z.1) in ; L.4 as (Z.1) in ; L.5 as (Z.1) in ; L.7 as (Z.1) in ; L.9 as (Z.1) in ; L.12 as (G.7) in ; L.13 as (G.7) in ; L.22 as (Z.1) in ; L.23	as as as as as as as as as

Vertical Curved line (𓏻): (O.W.4) [Möller 80-196-562- 585]

rphic e	CG 58007	CG 58008	CG 58009	CG 58010	CG 58011	CG 58012	CG 58013	CG 58014	CG 58015	
	as (G. 7) in p.1; L.5 as (Z. 3) in p.1; L.5 as (Z. 3) in p.1; L.6 as (G. 7) in p.1; L.13	as (G. 17); L.4 as (Z. 3); L.6 as (??. ??); L.10 as ligature between (X. 1)	as (Z. 3) in p.1; L.3 as (Z. 3) in p.1; L.5 as (Z. 3) in p.2; L.13 as (F. 25) in p.2; L.17	as (Z. 3); L.2 as (Z. 3); L.2 as ligature (Z. 4) and (X. 1) in; L.3 as (V. 28); L.6	as (Y. 1); L.1	as (U. 36); L.1 as (Z. 3); L.1 as (Y. 1); L.7 as (Z. 3); L.7	as (M. 17); L.2 as (G. 7); L.3	as (Y. 1); L.2 as (Y. 1); L.2 as (N. 21); L.4 as (Z. 3); L.7	as (Z. 3); L.3 as (N. 21); L.9	

	 as ligature (G. 38) and (X. 1) in p.1; L.19  as (Z. 3) in p.2; L.20  as ligature between (X. 1) and (N.21) in p.3; L.38  as ligature between (X. 1) and (N.21) in p.3; L.46  as (Z. 3) in p.4; L.58  as (G. 17) in p.5; L.68  as (V. 28) in p.5; L.69  (V. 28) in p.5; L.69	and (Z.5); L.6  as (G. 7); L.21  as (Y. 1); L.22  as (Y. 1); L.26  as (Y. 1); L.36  as (N. 21); L.37  as (Z. 3); L.43	 as (Z. 3) in p.2; L.20  as (Z. 3) in p.3; L.47  as (Z. 3) in p.5; L.53  as (Z. 3) in p.5; L.61	 as (V. 1); L.8  as (G. 7); L.9  as (G. 7); L.9		 as ligature (X. 1) and (Y. 1) in; L.8  as (Z. 3); L.11  as (Z. 3); L.18  as ligature (X. 1) and (H. 8) in; L.3	as (G. 7); L.20  as (Y. 1); L.21  as (Z. 3); L.21	 as (Z. 3); L.9  as (N. 21); L.11  as (M. 29); L.12		 as L.

Vertical Curved line (): (O.W.4) [Möller 80-196-562- 585]

hic	CG 58017	CG 58018	CG 58019	CG 58020	CG 58021	CG 58022	CG 58023	CG 58028	CG 58031	CG 58034	CG
	 as (Z. 3); L.7	 as (Z. 3) in p.1; L.1  as (Z. 3) in p.1; L.5  as (Z. 3) in p.2; L.27  as (Z. 3) in p.2; L.27  as (Z. 3) in p.2; L.33  as (Z. 3) in p.2; L.46  as (Z. 4) in p.2; L.48b  as (Z. 3) in p.2; L.56	 as (Y. 1); L.2  as (Z. 1); L.2  as (Y. 1); L.2  as (Y. 1); L.3  as (Y. 1); L.3  as (Y. 1); L.4  as (Y. 1); L.4  as (Y. 1); L.13	 as (M. 17); L.1  as (Z. 3); L.9	 as (Z. 3); frag. E; L.5  as (Z. 3); frag. E; L.8	 as (Z. 3); L.1	 as (G. 7); L.12+ x  as (V. 1); L.22+ x  as (Z. 3); L.40	 as (Z. 3); L.1	 as (Z. 3) in p.1; L.1  as ligature (W. 24) and (X. 1) in P.1; L.1	 as ligature (Y. 1) and (I. 9); L.6  as (Z. 3); L.8  as (Z. 3); L.9  as (Z. 3); L.11  as (Z. 3); L.11  as (Z. 3); L.17  as (Z. 3); L.18  as (G. 7); L.20	 as ( as ( as (as (