

Agenda for meeting on Egyptian Hieroglyphs

Thursday – Friday, September 12-13, 2019

Thursday: 9:30 a.m. – 5 p.m.; Friday (if needed) 9:30 a.m. – 3 p.m.

77220 Tournan en Brie, France

Attendees: Michel Suignard (host and author of [L2/19-220](#), Editor of ISO 10646), Svenja Gülden (AKU – Altägyptische Kursivschriften), Pierre Fournier (LaBex Archimede – UPVM), and Frédéric Rouffet (Arcanae)

Main topic: Review of [L2/19-220](#) repertoire**Topics****1. Comments on glyphs in [current code charts](#)**

Note: Michel has fixed many cases where Hieroglyphica did not agree with Gardiner, especially where the difference was significant.

- a) Bob Richmond (see appendix 1)
- b) Jorke Grotenhuis (see appendix 2)

2. Comments on [L2/19-220](#)

- a) Jorke Grotenhuis's comments (see appendix 3), some comments relate to the topic below, Combined signs).
- b) Stéphane Polis' comments (see appendix 4)

3. Combined signs (especially as relate to [L2/19-220](#))

Question: What are the principles for atomically encoding characters vs. use of format control characters ([L2/17-112](#)), especially for stacking, characters with overlays?

(Note: Bob Richmond is compiling a list of characters with 2-character middle overlays. This list and a doc on "On extending the Egyptian Hieroglyphic repertoire in Unicode" are posted at <https://github.com/HieroglyphsEverywhere/Docs/blob/master/UnicodeRepertoire/EgyptianHieroglyphOverlaysHieroglyphica20190911.pdf> and <https://github.com/HieroglyphsEverywhere/Docs/blob/master/UnicodeRepertoire/ExtendingUnicodeEgyptianHieroglyphicRepertoire20190911.pdf>)

4. Corrections to Möller field in [L2/19-220](#) spreadsheet (Svenja Gülden/AKU)**5. IFAO**

Questions: Should all IFAO characters be included (and in cases where no attestation has been found, should space be reserved for them)? If added, how to correlate IFAO with Hieroglyphica?

6. Proposed timeline for submission of Gardiner sets A-F to Unicode Technical Committee

Note: Once submitted to the Unicode Technical Committee, the proposal will be reviewed and will need to be approved. The proposal will also go to the ISO Subcommittee on Coded Character Sets (SC2) and its Working Group (WG2) and will eventually go onto a series of ballots for ISO 10646. The overall approval process takes about 2 years. During the approval process, additional comments can be made.

7. Other topics:

a) Views on additional insert control and shading control characters? (Suggestions from Andrew Glass)

Insert Control character:

The insert character under consideration is discussed on page 11 of [L2/17-112](#):





Other insertions

Other types of insertions have been discussed in [L2/16-210R](#) Nederhof et al., section 6. How to handle these cases remains an open question. The options are to encode them atomically or as a sequence using control signs.

| | | | |
|---|----------|------------|-----|
|  | Symbolic | D60 ☐ X1 ? | LTR |
| | Unicode | TBD | |

| | | | |
|---|----------|------|-----|
|  | Symbolic | D173 | LTR |
| | Unicode | TBD | |

Cf. [L2/16-210R](#)'s suggested approach with INSERT_CENTER character (section 6) (Mark-Jan Nederhof):

| Appearance | Unicode |
|---|---|
|  a |    |

Stéphane Polis is in support of this character.

Shading character:

The original proposal for Egyptian Hieroglyphs ([N1944](#)) contained shading control characters but there may be objections within the Unicode Technical Committee. One UTC member suggested using building a hack on top of the current syntax, using an existing geometric shade character.

8. Next Steps / Wrap-up

Acknowledgements: Many thanks to Michel Suignard (and family) for hosting the meeting!

APPENDIX 1:

Comments from Bob Richmond on current [Unicode 12.1 Code Chart Glyphs](#)

1. N037A

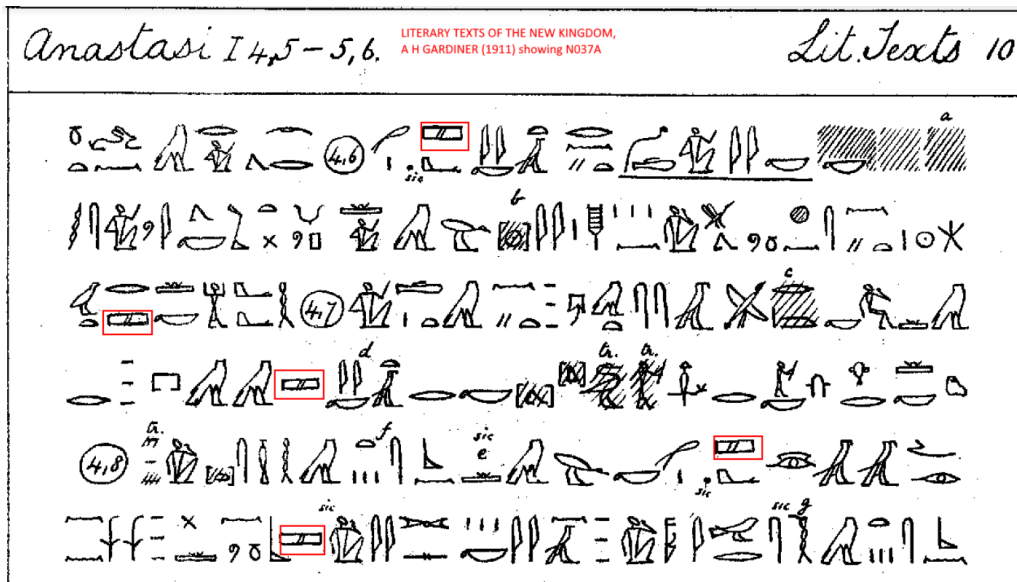
Comments: When we encoded Egyptian originally, EGYPTIAN HIEROGLYPH N037A was rectangle containing 2 strokes. Now it has 3 strokes in the latest code chart.

As I recall, Gardiner used 2 strokes in his variant of N037 so we encoded this. Hieroglyphica used a different 3 stroke glyph (and did not include the Gardiner form) and it seems this error has now been propagated into Unicode docs. Segoe UI Historic and Google Noto still look ok.

2 [strokes,] not 3 is significant. See below for an example of a text that would be broken if encoded with a font built according to current code chart.

If a 3 stroke version is required this must be added to the repertoire.

Recommended action: Change current glyph for N037A from 3 to 2 strokes. Get input whether a separate 3-stroke character is needed.



Current code chart (same as Hieroglyphica)

1321A  EGYPTIAN HIEROGLYPH N037A

Gardiner 1953:50



2. D0101

Comments: New D010 is full quadrat height whereas Gardiner is about 2/3. I'm not sure about this yet.

Recommended action: Get input on reducing size of current code chart glyph of D0101.

Current code chart:

13080 EGYPTIAN HIEROGLYPH D010

Gardiner 1928:14

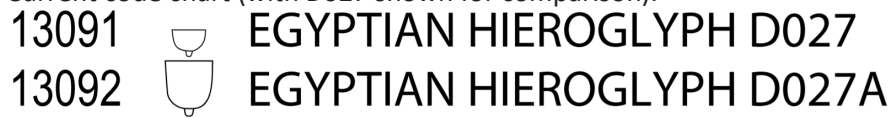


3. D027A

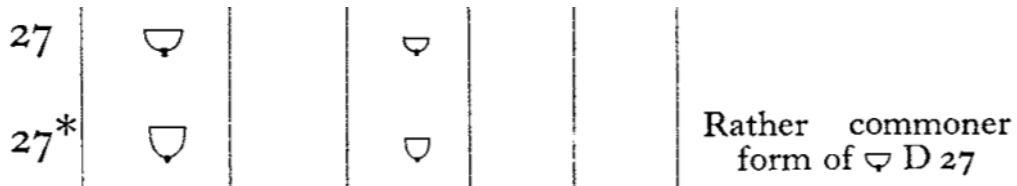
Comments: New D027A is full quadrat height and this was clearly not Gardiner's intention or common practice (he lists it among the small signs).

Recommended action: Reduce the size of the current code chart glyph for D027A.

Current code chart (with D027 shown for comparison):



Gardiner 1928:14:



4. D28 / D28A

Comments: Inexplicably, Hieroglyphica coded Gardiner D28 as D28A and D28 a larger variant. Probably just an error. New D028 is ok.

Recommended action: No action.

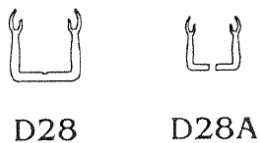
Current code chart:



Gardiner 1928:14:



Hieroglyphica



5. D031A

Comment: I'm not convinced by the new glyph for D031A - needs discussion.

Recommended action: Get input on current glyph in the code chart.

Current code chart:

13097  EGYPTIAN HIEROGLYPH D031A













Earlier glyph (from Egyptian hieroglyph proposal by B Richmond and M Everson [N3237](#)):



6. D059 (/D036/D058)

Comments: Gardiner clearly places D036 in front of D058 in the “size a” D59 in his Catalogue of signs but close inspection of his “size c” shows the opposite indicating an error one way or another. This “size c” form makes sense as its the reading order D036 (c) before D058 (b) so I therefore encoded the latter version and the old font is clear about this. The new D059 changes this by placing the D036 in front. Unless there is clear evidence, the previous order should be restored.

Recommended action: Change code chart glyph so D036 is in front of D058 in D059.

| NO. | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> |
|-----|---|---|---|---|--|
| 36 |  |  |  |  |  |
| 58 |  |  |  |  |  |
| 59 |  | |  | | |

Current code chart:

1309D  EGYPTIAN HIEROGLYPH D036

130C0  EGYPTIAN HIEROGLYPH D058

- transliterated as b

130C1  EGYPTIAN HIEROGLYPH D059

Earlier glyph (from Egyptian hieroglyph proposal by B Richmond and M Everson [N3237](#)):

1309D 𐦏 EGYPTIAN HIEROGLYPH D036

130C0 𐦏 EGYPTIAN HIEROGLYPH D058
= b

130C1 𐦏 EGYPTIAN HIEROGLYPH D059

APPENDIX 2:

Glyph Comments on Unicode 12.1 code charts -- Jorke Grotenhuis (with questions from Debbie Anderson and follow-up responses by JG)

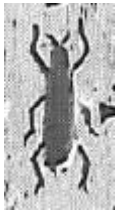
a. Incorrect image: U131AC should have legs, as it is the click beetle (I currently only know its existence from the Pyramid texts, it is in the article by Meeks about insects).

Current code chart:

131AC  EGYPTIAN HIEROGLYPH L008

Debbie: Can you provide an image?

Jorke: I can provide you with more details about the location if needed.





b. Not technically smaller, but just slightly broader: U1310B - U1310C (F13)

Debbie: Can you provide more detail on what shape the glyphs should be (with an example)?

Jorke: 1310B would do fine on by itself, I do not see the benefit of having two slightly variations. (Note that in Jseph and Hieroglyphica F13A is not 1310C!) if you can mark one of the two as theoretically non-functional, it would already work.

Current code chart:



1310B  EGYPTIAN HIEROGLYPH F013
1310C  EGYPTIAN HIEROGLYPH F013A

c. Seems to me a meaningless angle: U13319 - U1331A (T14)

(Debbie: Should the glyphs be changed?)

Jorke: That depends, what kind of control is possible with hieroglyphica. If it is possible to rotate hieroglyphica with some sort of control characters, it is not needed to add every possible angle of every sign (I would always argue a limited amount of signs that can be modified in position over adding every possible angle of a sign).

Current code chart:





13319  EGYPTIAN HIEROGLYPH T014
1331A  EGYPTIAN HIEROGLYPH T015

d. Minor change in form, not meaningful in my opinion: U13214 - U13215 (N34); U1337D - U1337E (F20A)

(Debbie: Should the glyphs be changed?)

Jorke: Changed, no, but I see no reason to keep both (I know they cannot be removed, but if they can be marked as duplicates of each other, it would already work. Every case of transcription into a standardized font is already an adaptation, in which case the extreme minor form variants as shown here would not really matter. If you wish to mark a 'primary' variant, use 13214 and 1337D.

Current code chart:



| | | |
|-------|---|---------------------------|
| 13214 |  | EGYPTIAN HIEROGLYPH N034 |
| 13215 |  | EGYPTIAN HIEROGLYPH N034A |
| 1337D |  | EGYPTIAN HIEROGLYPH V012A |
| 1337E |  | EGYPTIAN HIEROGLYPH V012B |

e. Reversed position without reflection in Gardiner: U13413 - U13414 (Aa7)



(Debbie: Should the glyphs be changed?)


Jorke: As before, I would prefer control characters that allows us to reverse the direction of signs, instead of doubling the signs, considering for these that my initial research showed no meaningful functional variation between the orientation. (There are more signs like this in the list, that I did not hit on yet, but might be better under the same point.) Note that this all depends on the possibility to change the orientation and position of the unicode sign.

Current code chart:

| | | |
|-------|---|----------------------------|
| 13413 |  | EGYPTIAN HIEROGLYPH AA007 |
| 13414 |  | EGYPTIAN HIEROGLYPH AA007A |

Gardiner 1928: 36

| | | | | | | | | | |
|----|---|--|--|--|--|--|--|--|--|
| 7 |  | | | | | | | | |
| 7* |  | | | | | | | | |

Reversed form of
 Aa 7

f. Slightly smaller: U13168 - U13169 (G36); U13209 - U1320B (N25); U1339F - U133A0 (V30); U133B1 - U133B2 (W3); U13213 - U133E7 (N33A)

(Debbie: Should the glyphs be changed?)

Jorke: No, but I want this to be shown, and the second smaller ones to be marked as 'not functional', as I do not see the rationale of making smaller versions of some signs, but not all, or vice-versa. I get that the current set cannot be changed, but my main point is that there are issues in the current list,




that I would prefer not to have repeated in any addition (except for my existing objection to the inclusion of a long new list as well, partly due to the issues I spotted here).

Debbie: Note: The set of Egyptian Hieroglyph characters in Unicode was published in 2009. The code chart glyphs can be modified with rationale/evidence, but the character shouldn't have its overall identity changed [that is, a bird should not be changed to a pig, but its size could be slightly modified]. Characters cannot be removed, but if you believe a character is a true error, I think that would be very helpful to capture in a database entry, so students would know not to use it.

Jorke: This would be a start for me, but for the future we should try to limit these issues, and we should make it clear why we consider some Unicode signs less useful than others (and at a place where it is easy to spot). True errors are difficult to discuss, as I have not seen every hieroglyph in existence, but that is why I work on the side of safety, working from the principle that an ancient source needs to show me the existence of a sign before I consider that it exists, instead of just believing that there were no mistakes, or misinterpretations in the list.

Another point I left out concerns U13155, (G19) [see below] which is a Gardiner sign, which I could not even locate at all, as Gardiner gives no sources for it, and except for the sign list of Hornung & Schenkel, which directly refer back to Gardiner, there is no other sign list I know of which even supports the existence of this sign, including Kurth and Cauville (Ptolemaic sources). I do not know what Gardiner based this on, but I guess it is from Hieratic, in which case the reading is dubious, as it could have been transcribed as U13155 as well.

Current code chart:

| | | |
|-------|---|---------------------------|
| 13168 |  | EGYPTIAN HIEROGLYPH G036 |
| 13169 |  | EGYPTIAN HIEROGLYPH G036A |
| 13209 |  | EGYPTIAN HIEROGLYPH N025 |
| 1320A |  | EGYPTIAN HIEROGLYPH N025A |
| 1339F |  | EGYPTIAN HIEROGLYPH V030 |
| 133A0 |  | EGYPTIAN HIEROGLYPH V030A |
| 133B1 |  | EGYPTIAN HIEROGLYPH W003 |
| 133B2 |  | EGYPTIAN HIEROGLYPH W003A |
| 13213 |  | EGYPTIAN HIEROGLYPH N033A |
| 133E7 |  | EGYPTIAN HIEROGLYPH Z002B |
| 13155 |  | EGYPTIAN HIEROGLYPH G019 |

Note that there are a few ovals and circles as well which are repeated, but as they technically are variants of signs without inner detail, and therefore could be considered different (as we made them classes in the TSL).

From these points, I find the V30 and W3 variant most problematic, if you want to point out two.

Postscript: If needed, I can provide you as well with a few signs that I had to rework, as I found that the Gardiner sign is actually not the majority, or exists (to my current knowledge). Further we had a few cases where the image of Gardiner and Jshes versus Hieroglyphica and Unicode does not line up (for example, A43, where Gardiner and Jshes do not have a beard, but Hieroglyphica and Unicode does), which gave some interesting effects. Usually this is really minor, as both options exist, and I don't want to go into who is right, but it is another feature that needs to be taken into regard when copying only one font for Unicode, and basing it only on modern sources, instead of the ancient ones.

Debbie: This is something Michel should respond to. I believe these cases should be documented.

Jorke: Definitely, but I do have to point out with the A43, I was actually able to locate both version in hieroglyphs, so in this case both versions exist, but I cannot say this is not always the case.

To restate my point in general, although I do not agree with the current move forward, if it happens, I would just want to ask that more care is taken with the details and precision. As most people know that the extended library of hieroglyphica is really poorly sourced, I feel really uncomfortable by just uploading that, without taking the other sources in regard. If it needs to be done by modern sources, please make sure more than one list is checked, preferably Kurth and Cauville, although these have real issues in them as well (although more on the function side than the actual shape). I will take a look today at the proposal, to see if I can spot any obvious problems, but I have to say that I currently do not have the time for a really deep look.

APPENDIX 3:

Comments on [L2/19-220](#) -- Jorke Grotenhuis¹

Hereby a few remarks base on only a quick look at the proposal.

Threshold for deciding whether to add characters

First, the regard if a sign should be added or not (I might have misinterpreted his point here though). The value of 1 or more is sufficient to add this? I strongly disagree, as when one finds a hieroglyph somewhere in a modern source, it would already be at 1, so already past the threshold.


Second, this system ignores the fact that often the modern sources refer to one another, which might be hidden if you do not look closely to the notes. Kurth often states see VP, IFAO, or Cauville.


Third, as my point has always been, to me a modern source is nothing, I can live with it if the value one is given to a list when a ancient source is mentioned, I get that he does not have the time to look at everything, but I do not think the value of 1 should already be given when there is no source at all for the form, or if it only refers to another source (For example, when the value is 2, VP and Kurth, but Kurth refers to VP, the value should be considered 1, not 2).

So, in my opinion the value of the threshold for encoding proposal should be at least 3 or more, with a minimal of 1 reference to an ancient source (which should be noted with the proposed sign, so that it can be checked by Egyptologists). If the only sources for a sign are modern sign lists etc., we really need to push the threshold higher.

Case of Hieratic

As a final point on this issue, there is one feature that is easy to overlook if one only looks at the modern sources. There are signs in existence, that are mere hieroglyphic representations of Hieratic signs, and do not actually occur as hieroglyphs. For example from the Gardiner list, we have U13086 (D16) . This sign does not actually occur in hieroglyphic texts (as hieroglyphic texts rarely go over 1/16th if they have fractions at all). Although I understand the logic of the sign, as every part of the Udjat eye is a different fraction, in the Hieratic script, the sign actually looks identical to U133F6 (Z11).

13086  EGYPTIAN HIEROGLYPH D016
• 1/64



133F6  EGYPTIAN HIEROGLYPH Z011

So, the sign is actually a modern creation, and although the assumption seems reasonable, the existence of the sign is conjecture, and it is possible the Ancient Egyptians did not understand it as we now think. So the including of the specific form used is dubious at best, and I am certain this is far from the only sign where this is the case. (especially with men and the positions of arms and hands).

Modern vs. Ancient Sources

To specify my point of modern sources versus ancient sources, I would refer to an issue with U13105 vs. U13106.



¹ Formatting and image insertion (save one) by D. Anderson

13105  EGYPTIAN HIEROGLYPH F007
 13106  EGYPTIAN HIEROGLYPH F008

Now I do have to state that both these signs exist, but there were cases where I had transcriptions, for one stela a transcription by Lacau, and one by Sethe (Urkunden) so we have the same text, but one used U13105, where the other used U13106. If I did not have the image, I would not have known which one to trust (it turned out that Lacau transcribed correctly, and Sethe did not). Often these are minor details, but it is a reason why we have been pushing so hard to actually check modern sources with the original, and we do not blindly follow modern sources only.

Positional Variation
















Second, for the list itself, for example in the column 1344. The first signs are a group of hieroglyphs with variations in hand position. Here I have to wonder if it was taken into regard where the limits between variation and same are placed, how extreme must the hand position be in opposition to the other glyph to decide if should be encoded separately, or if it can be caught under one standard sign. As far as I know the Unicode works under the principles of standardisation, not epigraphical precision, so we might need to take a look if the sign variation group matters or not, before adding a theoretical sign of a man with his hand in front of him on a 80 degree angle and one with the hand on a 110 degree angle for example.

| | |
|---|---|
| | 1344 |
| 0 |  13440 |
| 1 |  13441 |
| 2 |  13442 |
| 3 |  13443 |

System of control characters to combine signs

Third, I spotted many signs (especially column 13BC-13C0, where I would prefer to see a system that allows us to use signs, and combine them using control characters, instead of adding every possible variant, which will allow users to create signs that are currently not covered by the list as well. I think the focus should lie on the development of these control characters before adding a lot of extra signs.





13BC 13BD 13BE 13BF 13C0

| | | | | |
|--|--|--|--|--|
|  13BC0 |  13BD0 |  13BE0 |  13BF0 |  13C00 |
|  13BC1 |  13BD1 |  13BE1 |  13BF1 |  13C01 |
|  13BC2 |  13BD2 |  13BE2 |  13BF2 |  13C02 |

Duplication





The final issue I spotted with the current list that I am still afraid duplication is occurring (as I know it to happen in Hieroglyphica as well, I sadly currently have no clear examples). For example, U14026 U14027² might be duplicated as well in category Aa (as they are variants of Aa2 (U1340F)), but due to development in Egyptology, and how we understand signs, they might be moved or duplicated.

² Corrected from U13027 by D. Anderson.



- 14026  EGYPTIAN HIEROGLYPH F-30-004
- 14027  EGYPTIAN HIEROGLYPH F-30-006
F-30-008 referenced as AA003
→ 1340F  egyptian hieroglyph aa003
- 1340F  EGYPTIAN HIEROGLYPH AA003

For example, the sign list of Hornung & Schenkel made sure to get rid of category Aa, but by doing so, it is possible that if one uses them as the source of the proposal, the sign might show up in F, but in Aa as well, duplicating the sign. (If one does not know this happened, and bases the list on H&S and Kurth for example.) Thus, based on this, and the fact that this is only a section of the signs, I am quite certain duplication will happen again.

For one sign I just spotted, U13F9D, it is another variant of the 1337D/1337E group I discussed from the original Unicode list.

- 13F9D  EGYPTIAN HIEROGLYPH F-16-008
F-16-009 referenced as V012B
→ 1337E  egyptian hieroglyph v012b
- 1337D  EGYPTIAN HIEROGLYPH V012A
- 1337E  EGYPTIAN HIEROGLYPH V012B

Another I spotted is U1400F, which is the reverse of U1341D.

- 1400F  EGYPTIAN HIEROGLYPH F-26-011
- 1341D  EGYPTIAN HIEROGLYPH AA015

Summary

These are my major first points that I saw based on a quick look, but I would like to stress that I think that the principle of proposal needs to be changed, and made more difficult to pass the threshold, and the inclusion of ancient sources in this method.

Second, I would prefer that some focus lies on the creation or finishing of tool that allows for the placement and interaction of existing Unicode signs, before moving forward with adding a lot of signs which could be created by the user himself.



Third, one has to look at the actual tokens of the modern sources, including the tiny details, to make sure that they are actually the same, even if the difference is minor and is most likely meaningless.

APPENDIX 4

Comments on [L2/19-220](#) -- from Stéphane Polis¹

Atomically encoded characters vs. characters created with format controls



Since some control characters have already been adopted, I do not understand why we need to encode atomically groups that can be produced with such control (overlays, corner insertions, etc.). There are still a lot of them in the current charts. I know that some simple groups, like 130B0, 130B1, 130B2, 130B3, etc. (and the numbers in general), were encoded atomically in the first version, but one should certainly stop encoding groups atomically now that we have controls (same remarks for the center insertions, which would significantly reduce the number of code points needed if this control is added).

130B0  EGYPTIAN HIEROGLYPH D050C
130B1  EGYPTIAN HIEROGLYPH D050D



Repertoire includes modern variants of same grapheme / threshold for adding characters

I still maintain that many signs in the proposal are just *modern* variants of the same grapheme in ancient Egyptian, for which you would have a hard time finding an actual example in an ancient texts (some scholars chose to retain some iconic features when copying a sign, some others, and they copy each others, of course). The thresholds based on modern sign-list are simply not relevant, unless hieroglyphs in Unicode are meant to re-print old sign-lists. As for some other variants, if they can indeed be found in ancient texts, they are very often not meaningful. It feels to me like you would want to create code points for the <a> as written by Chaucer, the <a> as written by Balzac, and the <a> as written by Calvino. Is it really what Unicode is about?

A reasonable threshold, imho, would be: at least 1 *ancient source* for a given sign. And even then, this would call for some serious thinking: take the hippo with one harpoon standing [13DF3], with two harpoons kneeling [13DF6], why not with 3, 4, 5 or 6 harpoons since all these cases are attested?

13DF3  EGYPTIAN HIEROGLYPH E-14-008
13DF6  EGYPTIAN HIEROGLYPH E-14-011

Sometimes, it's simply funny!!! Take 13D47 vs. 13D48 for instance: does anyone think that there has ever been any difference between the dagger facing left and the dagger facing right in the back of an animal? Maybe that the scribe was right vs. left-handed???


13D47  EGYPTIAN HIEROGLYPH E-02-041
13D48  EGYPTIAN HIEROGLYPH E-02-042


I do not want to be over-ironic, but please consider that if adding such signs, you should be ready for several dozens of variants for every single sign of animate, just based on the number of harpoons/daggers/other weaponry that they can receive in funerary contexts.

¹ Images and headings added by D. Anderson

Cursive forms

Why would we add cursive forms such as 1379A, 137AA, etc. which are not standardized hieroglyphs?

1379A  EGYPTIAN HIEROGLYPH A-34-002

137AA  EGYPTIAN HIEROGLYPH A-34-01

INSERT CENTER control character

I strongly support the INSERT_CENTER control, already suggested in Nederhof et al. (and now considered by Andrew Glass).