

# Digitizing Seth: Digital studies of Sethian Hieroglyphs in the Coffin Texts

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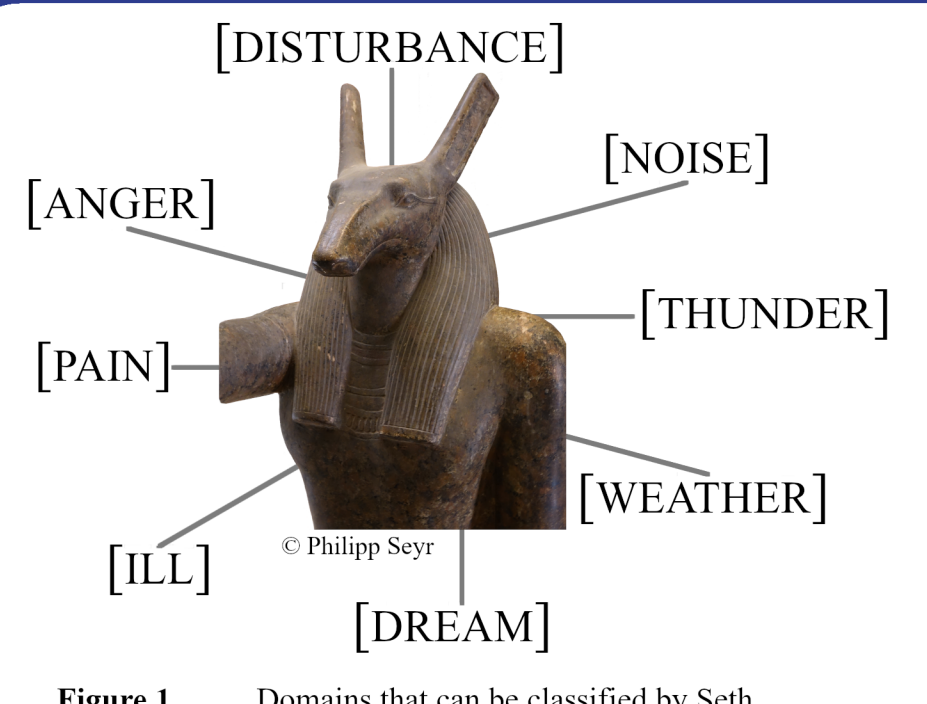


Figure 1. Domains that can be classified by Seth.

## Introduction

The god Seth and his animal representation is known to occur in the Hieroglyphic script not only in the lemma *stb/stt* and any other title of Seth but in a more broad metaphorical sense in different lemmas. In these other lemmas, Sethian signs are used as classifiers, not only as a taxonomic classifier but rather more commonly as a schematic classifier. For example, it can classify [THUNDER], [NOISE], and [DISTURBANCE] in the lemma *stb/stt* (storm, rage), as discussed in Allen (2007) and Soler (2021). In the same vein, it can classify [PAIN] or [ILL] in the lemma *stb/stt* (*st* to be ill).

The list of lemmas that can take a Sethian classifier was proposed by de Velde (1977) and expanded by McDonald (2007). This list contains 38 lemmas that can take a Sethian classifier in the Ancient Egyptian script during the Pharaonic period.

However, to study the use of these classifiers in detail, digital tools are invaluable. This poster represents some of the tools and methods that are available to the Egyptological community and show the potential of the results provided by the *iClassifier* research tool and other digital tools.

## *iClassifier* and Sethian classification in the Coffin Texts

As a case study for this poster, the Coffin Texts were chosen as a corpus for the study of the use of the Sethian hieroglyphs when they function as classifiers. Following the index of the words in the Coffin Texts by van der Plas & Bourghouts (1998), the attestations of the 38 lemmas that can take Sethian classification were located, providing 1781 intact attestations of 25 out of the 38 lemmas which can take Sethian classification, that occur in CT I-IV. Note that the selection was based on not only the lemmas of the list, but including their derivatives and variants as well, in order to represent the root of a lemma (see Winand (2013)). For example, all derivatives of *stb* (to rage), for example *stt* (storm), were included under *stb*. Variants, such as *imj-nbwt* (the one who is in Ombois (Seth)) was added besides *stb* (the Ombois (Seth)), as it did not occur in the original list of lemmas. Note that this is a representative corpus for Middle Kingdom mortuary texts, and any results might not apply outside this period and genre.

These tokens were encoded in the *iClassifier* research tool *iClassifier* (Goldwasser, Harel, Nikolaev). Using *iClassifier*, the data can be visualized as a classifier map as shown in Figure 2:

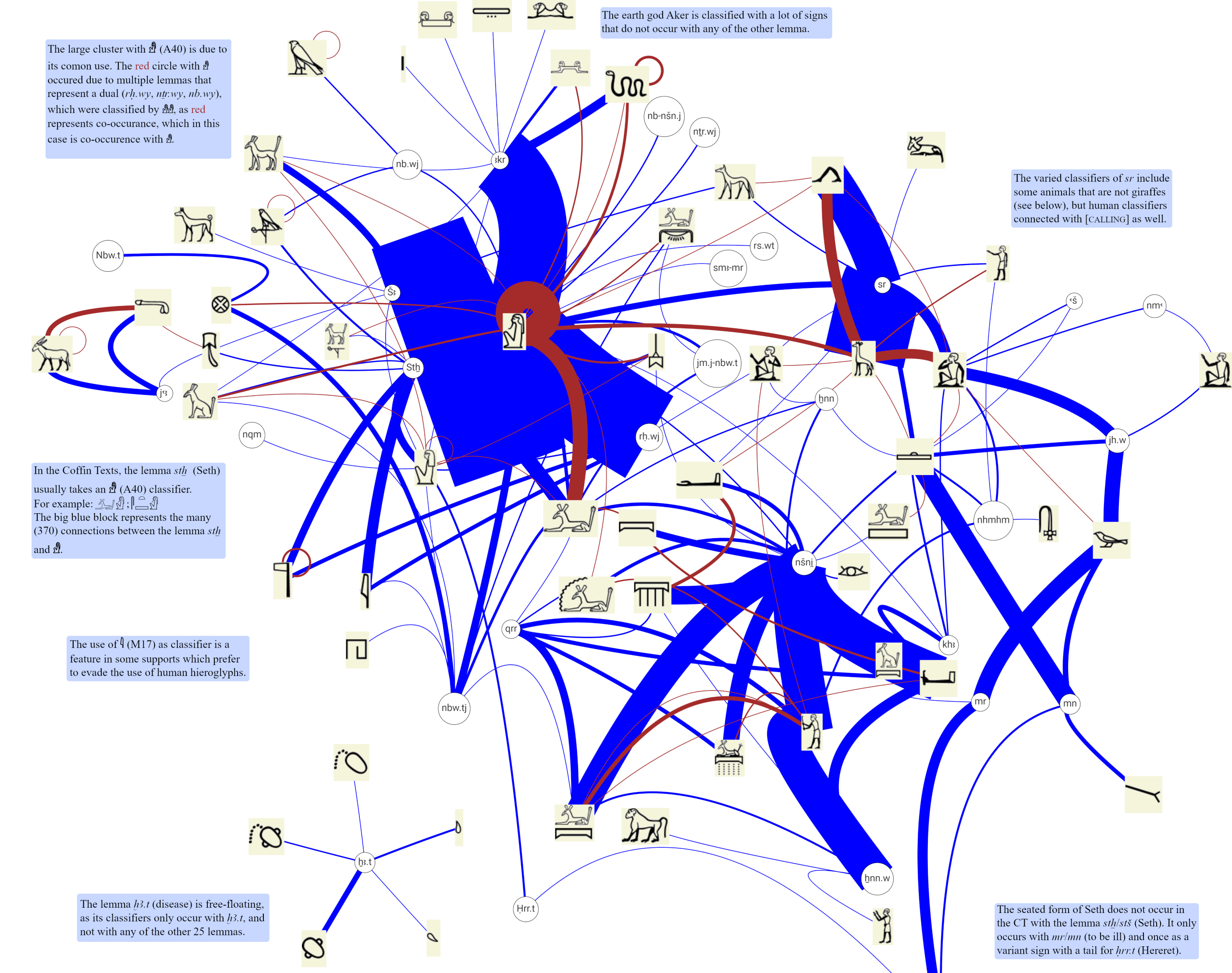


Figure 2. Classifier map of the classification of lemmas in the CT which can take a Sethian classifier. *iClassifier*. In this classifier map all the data of the 25 lemmas that can take a Sethian classifier are visualized as a network. The classifiers are depicted as hieroglyphs and the lemmas are shown as circles with transliteration inside. The blue lines represent a link between the classifier and its host lemmas. The red line represents classifier co-occurrence, where one classifier occurs with another classifier in the same lemma. The width of the lines depict the number of connections between the lemmas and classifiers. The wider the line, the more connections occur.

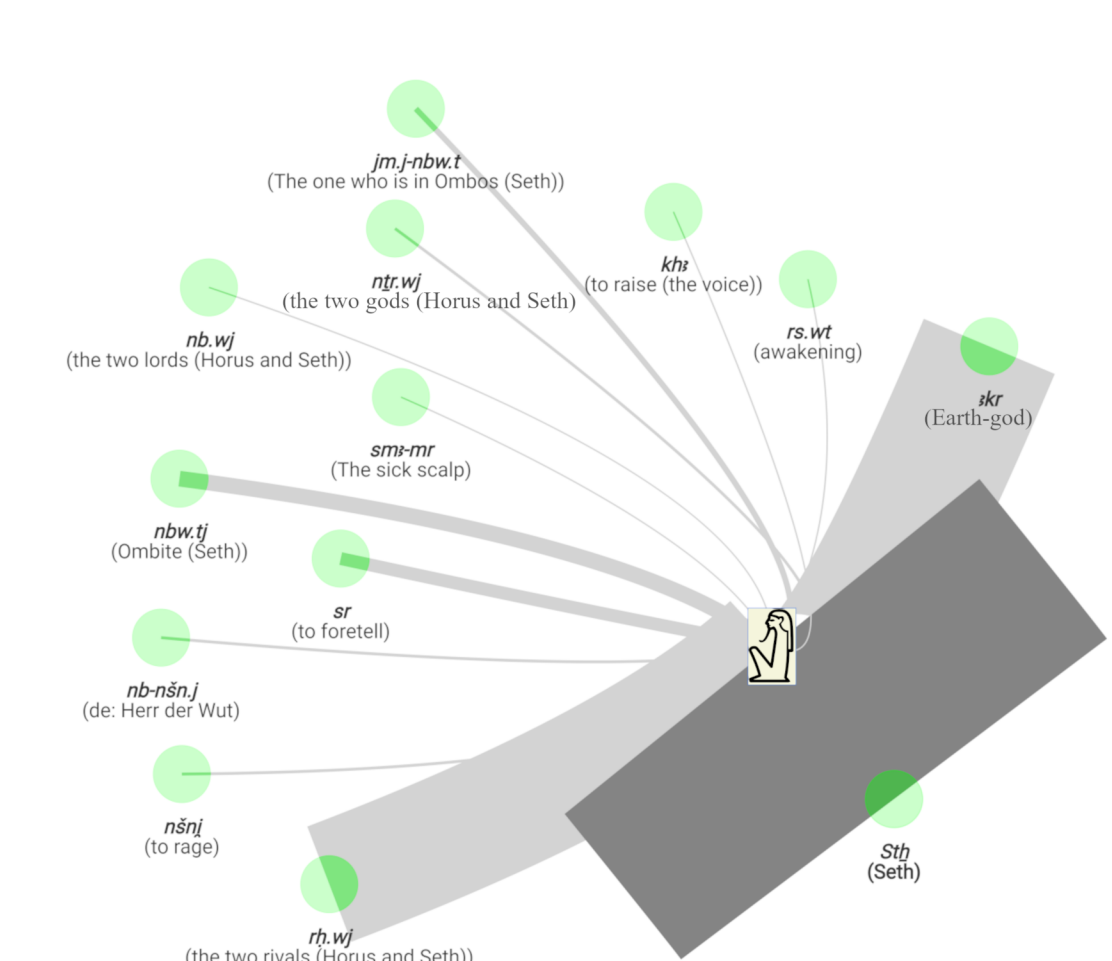


Figure 3. Lemna co-occurrence graph for stb (A40).

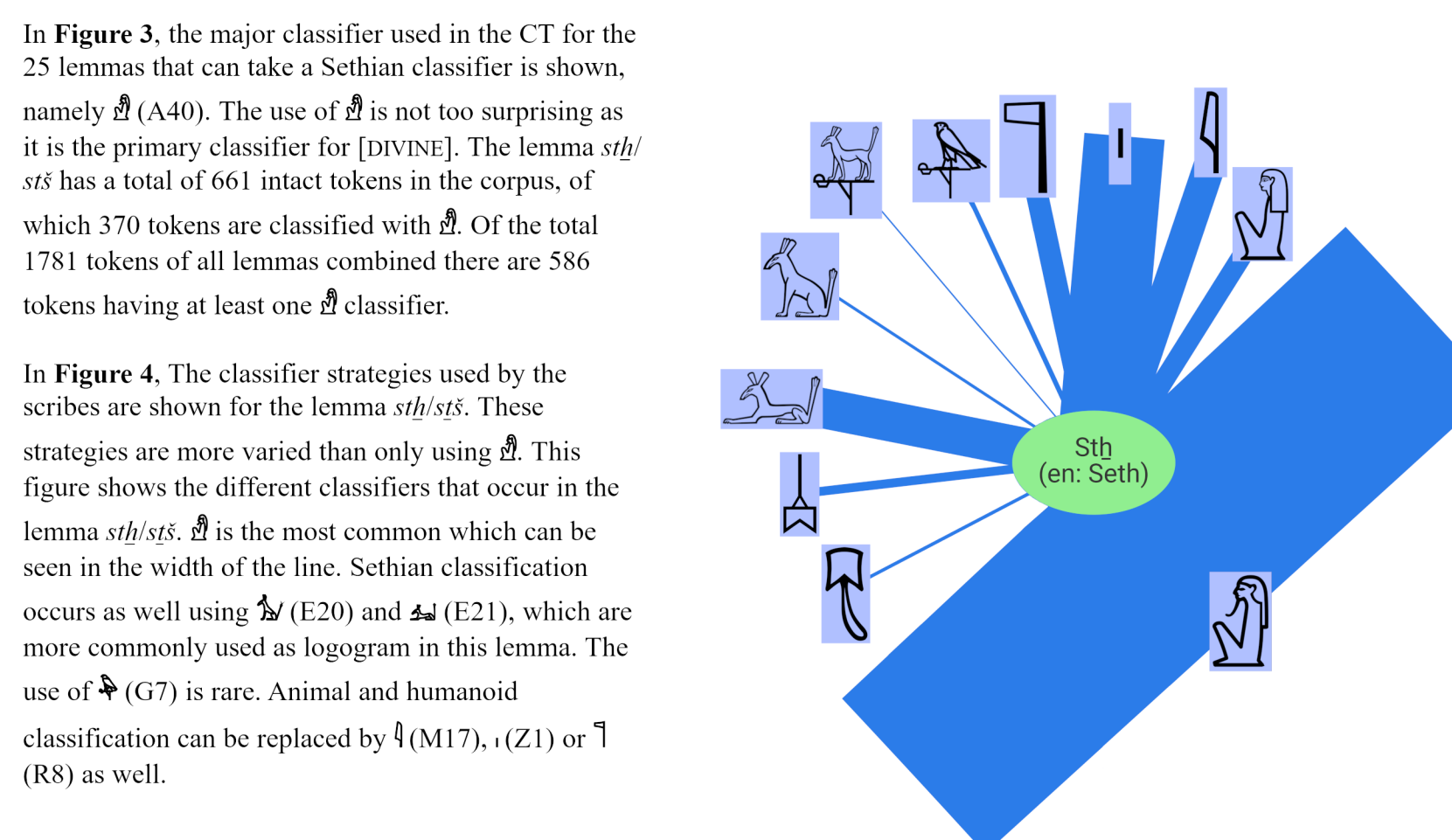


Figure 4. Classifier co-occurrence graph for the lemma stb (Seth) *iClassifier*.

In Figure 3, the major classifier used in the CT for the 25 lemmas that can take a Sethian classifier is shown, namely *stb* (A40). The use of *stb* is not too surprising as it is the primary classifier for [DIVINE]. The lemma *stb/stt* has a total of 661 intact tokens in the corpus, of which 370 tokens are classified with *stb*. Of the total 1781 tokens of all lemmas combined there are 586 tokens having at least one *stb* classifier.

In Figure 4, the classifier strategies used by the scribes are shown for the lemma *stb/stt*. These strategies are more varied than using only *stb*. This figure shows the different classifiers that occur in the lemma *stb/stt*. *stb* is the most common which can be seen in the width of the line. Sethian classification occurs as well using *stt* (E20) and *stt* (E21), which are more commonly used as logogram in this lemma. The use of *stt* (G7) is rare. Animal and humanoid classification can be replaced by *stt* (M17), *stt* (Z1) or *stt* (R8) as well.

## The animal in *sr* (to predict, to announce) in the Coffin Texts: Giraffe, Seth, or something else?

In addition to the above-discussed set of 25 out of the 38 lemmas which can have a Sethian classifier, McDonald (2007) suggests that the lemma *sr* should be added to this list of 38 lemmas as well. Most commonly, when the animal classifier of *sr* is depicted in transcriptions, the animal is a giraffe (𓆎). The giraffe is used in Ancient Egypt, see for example PT 278n in the pyramid of Unas (see Figure 11). One can wonder if every transcription of a giraffe is correct, especially when dealing with cursive and hieratic supports. McDonald (2009) argued that the sign transcribed in the Book as a giraffe in the Coffin Texts is rarely a giraffe in the cursive signs used in the supports. But what grapheme is used for the *sr*-animal in the Coffin Texts instead of a giraffe?

Figure 12 is a collection of all the different shapes the animal of *sr* can take in the CT. The figure contains 96 tokens of the 178 attestations of *sr* or its derivatives in the CT. Of these 178 attestations, 27 were reconstructions, 7 were without a classifier and 48 did not use an animal. These 96 tokens were manually sorted based on shape and clustered together, with every sign representing a single attestation in the CT.

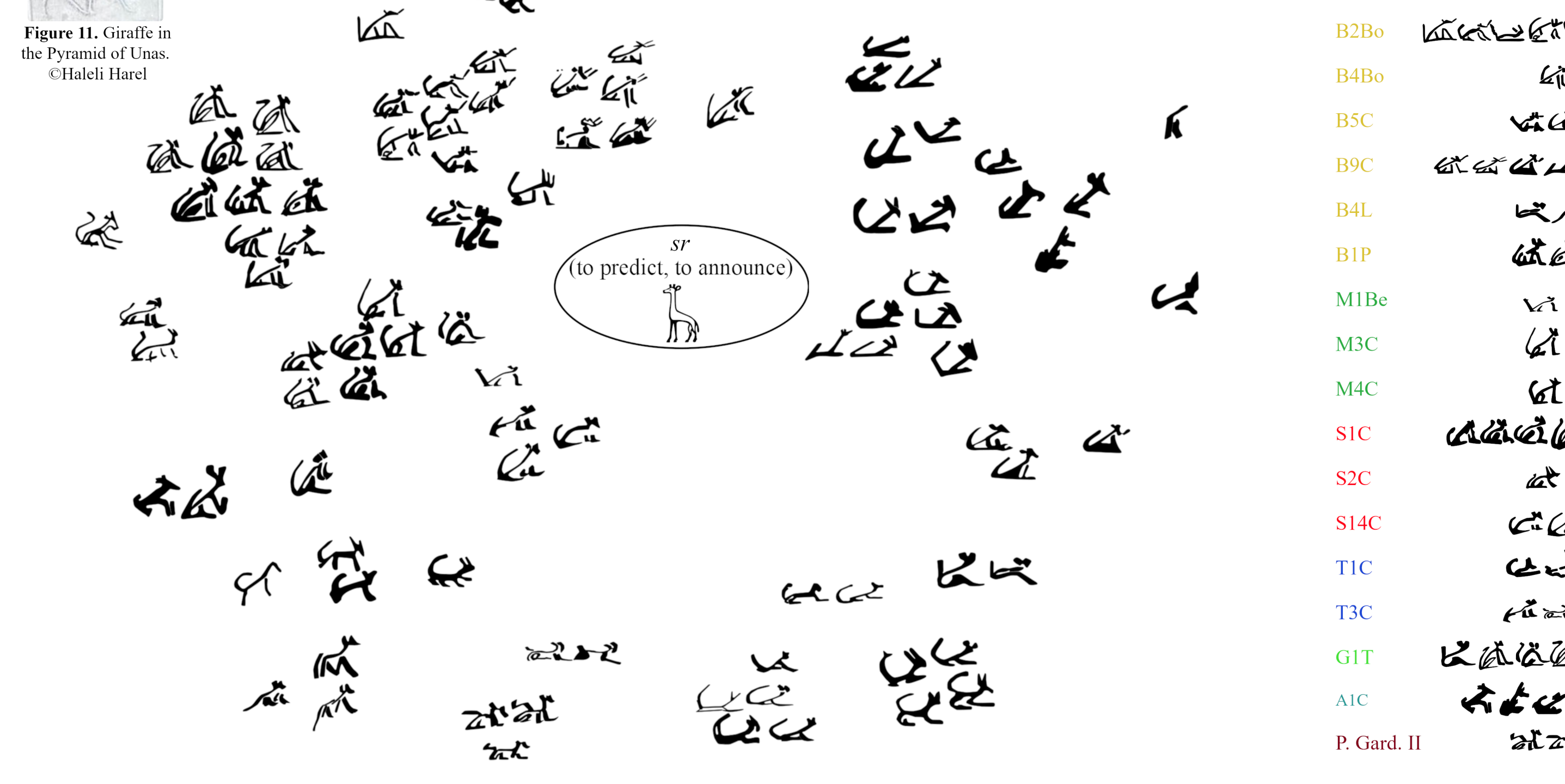


Figure 12. The 96 collected tokens of the *sr*-animal attested in the Coffin Texts, sorted and clustered according to shape.

Figure 11. Giraffe in the Pyramid of Unas. ©Haleli Harel

Figure 13. Appearance of the *sr*-animal and the Seth animal in the same supports of the Coffin Texts. The figure shows a list of signs and their corresponding transliterations, such as B2Bo, B4Bo, B5C, B9C, B4L, B1P, M1Be, M3C, M4C, S1C, S2C, S14C, T1C, T3C, G1T, A1C, and P. Gard. II.

Figure 14. Proposed Hieroglyphic interpretations of the *sr*-animal for the 96 tokens from the Coffin Texts. The figure shows various interpretations of the animal sign, including giraffe, Seth, and other animals, with their corresponding transliterations.

Acknowledgements and selected bibliography. This work is supported by the Israel Academy of Sciences and Humanities & Council for Higher Education Excellence Fellowship Program for International Postdoctoral Researchers. Harel, Haleli, Only Goldwasser, and Dmitry Nikolaev 2023. Mapping the ancient mind: *iClassifier*, a new platform for systematic analysis of classifiers in Egyptian and beyond. In Lucarelli, Rita, Joshua Aaron Roberson, and Steve Vinson (eds.), *Ancient Egypt, new technology: the present and future of computer visualization, virtual reality and other digital humanities in Egyptology*, 130-158.

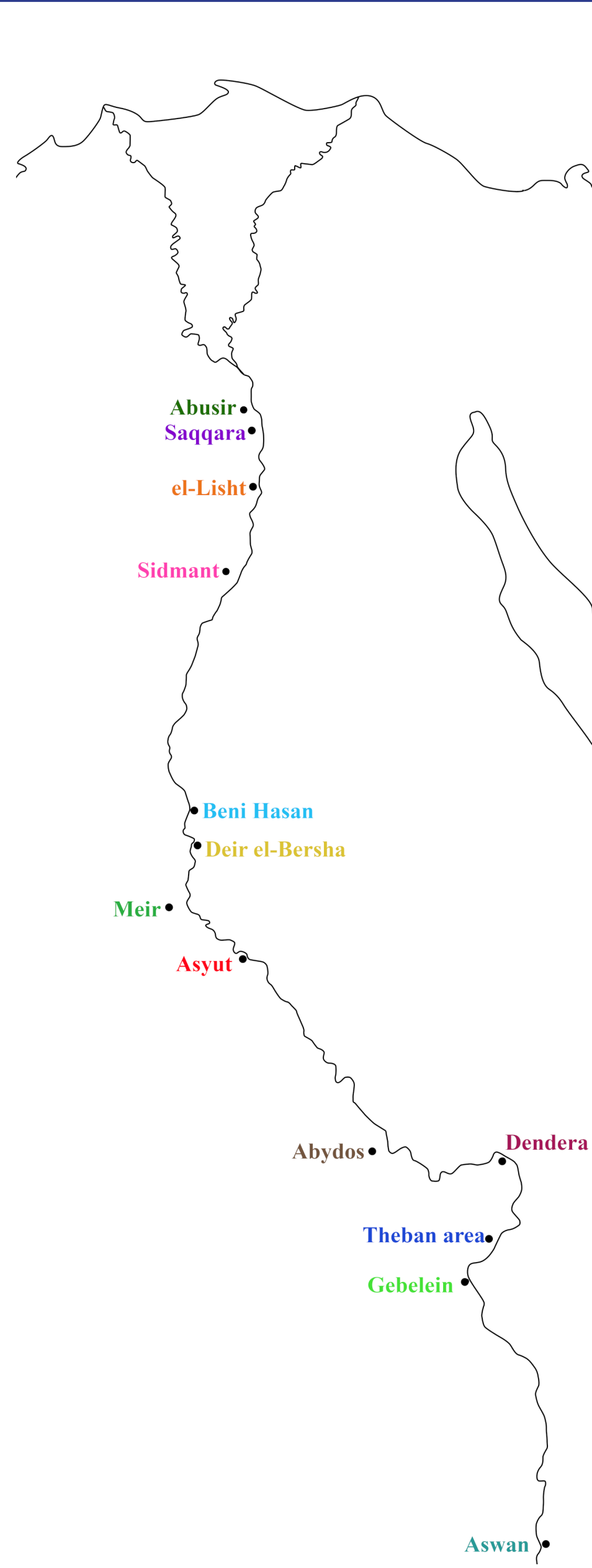


Figure 5. Map of Egypt, with color-coded regions. Colors were chosen randomly.

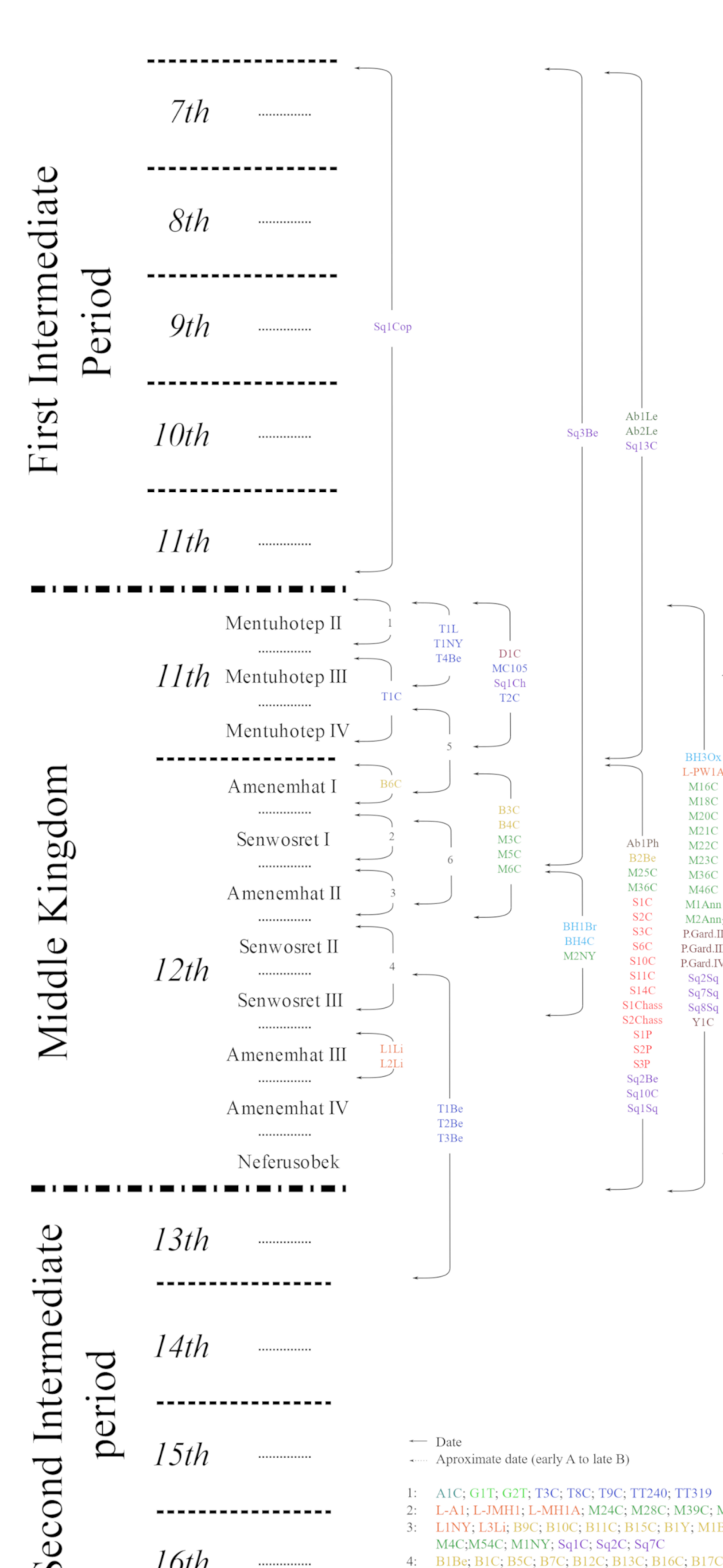


Figure 6. Chronology of the Coffin Text supports, color-coded for the regions of origin of the support (see Figure 5).

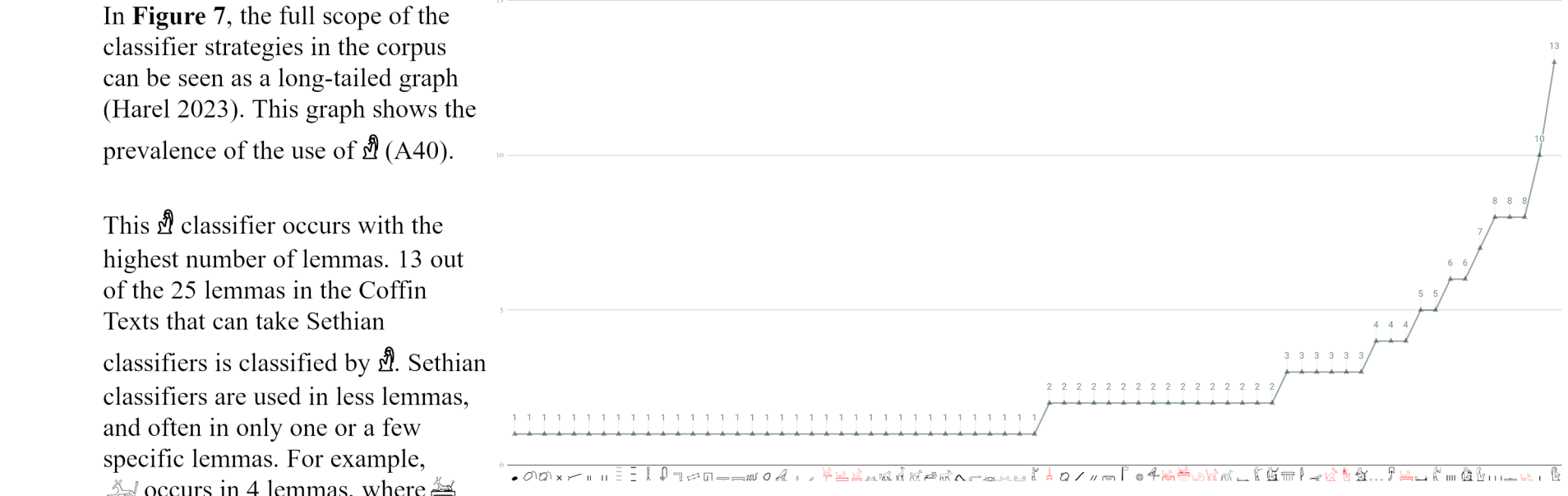


Figure 7. Long-tailed graph representing the occurrence rate of classifiers based on lemma in the 25 lemmas that can take a Sethian classifier in the Coffin Texts. Sethian classifiers are highlighted in red. *iClassifier*.

## Regional and chronological variation

Sethian classification in the Coffin Texts is rare. In the corpus, only 9% of the tokens are classified by using a Sethian sign, as can be seen in Figure 9. Of the 25 lemmas which can take a Sethian classifier in the Coffin Texts, only 12 lemmas were found that use a Sethian classifier. In Figure 8, the 12 lemmas that have Sethian classifiers in the Coffin Texts are shown.

**Regional Sethian classification:** The use of Sethian classifiers is rare in the 12 lemmas. Only *stt* (Seth's animal) and *err* (storm) have more tokens with Sethian classifiers than without Sethian classifiers. It is remarkable that not all regions have Sethian classifiers for all the lemmas. Instead, some lemmas like *hnt* (to trouble) only have Sethian classification in Deir el-Bersha. But the lemma *hnt-w* (disturbance) is never classified in Deir el-Bersha with a Sethian classifier. As there is some relation between the two lemmas, this is remarkable.

The data can seem deceptive as well. The lemma *err* has 25% Sethian classification in the Coffin Texts. But as there are only 4 attestations of *err* in the Coffin Texts, the single token with a Sethian classifier is less meaningful than the 25% in the figure suggests.

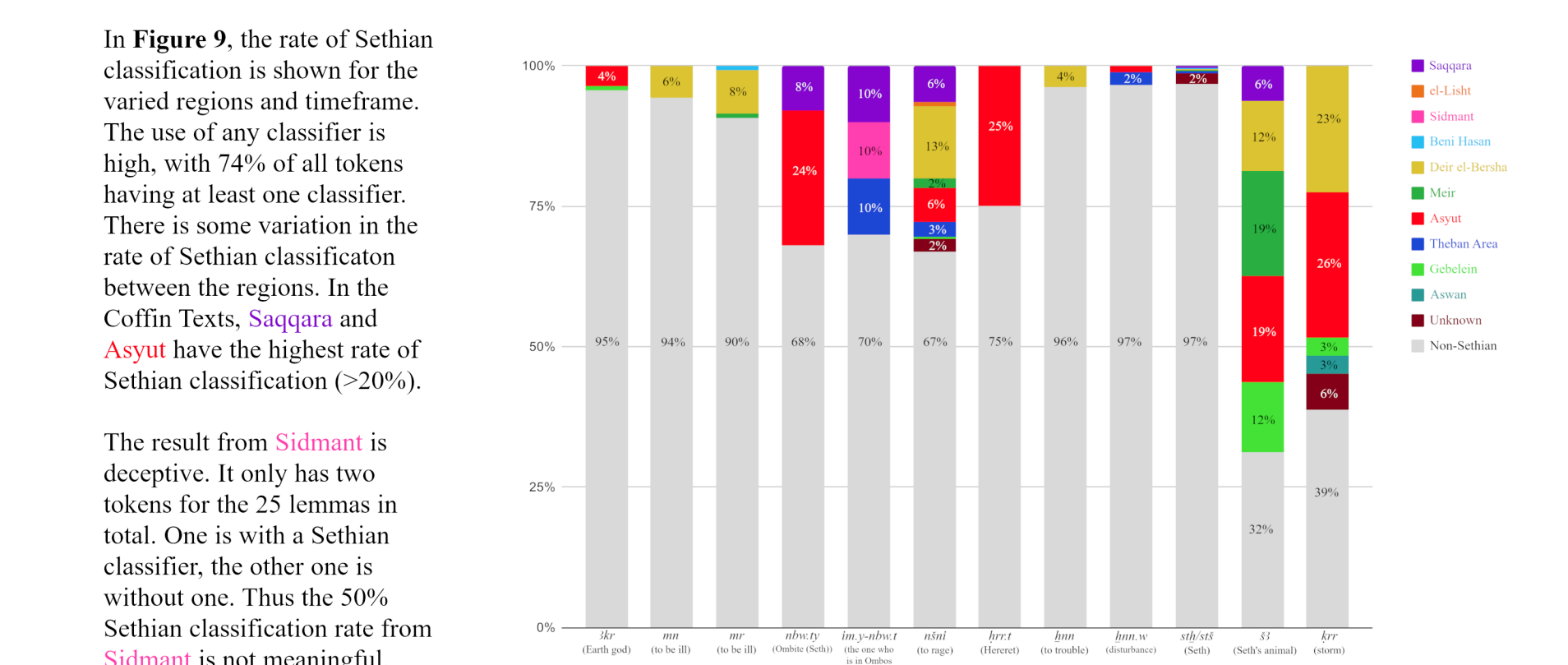


Figure 8. Occurrence rate of Sethian classification in the 12 out of the 25 lemmas in the Coffin Texts that show Sethian classification, sorted by region. *iClassifier*.

**Diachronic variation:** There is some diachronic variation. Deir el-Bersha has a low rate of Sethian classification (6%, see Figure 9). In the supports from the 11th dynasty to Amnennhat II, there is a rate of 5% Sethian classification. There is a slight increase (+2%) in the reign of Senwosret II to Senwosret III in Deir el-Bersha.

In the Theban area, a similar development occurs. The earlier-dated supports (Mentuhotep II-IV) have a low rate of Sethian classification (4%). The later-dated supports (Senwosret III and later) have a higher rate (12%). However, this is deceptive. All attestations of Sethian classifier use come from the same support (T21E) in a group of three different supports (see Figure 6). It is likely a preference of the scribe instead of a region-wide pattern.

Saqqara has a similar raise in Sethian classification rate over time. For the later period of coffin decoration in Saqqara (Middle of the 12th dynasty), Sethian classification only occurs in one lemma, *stt*.

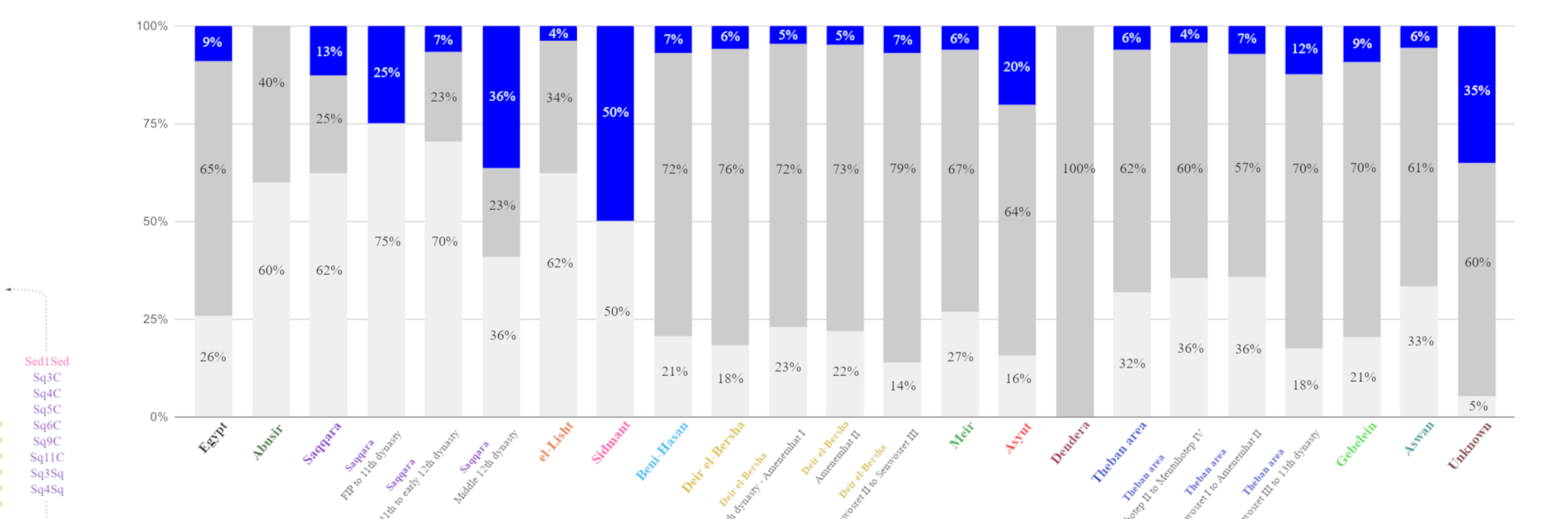


Figure 9. Sethian classification in the Coffin Texts set out based on region and chronological Sethian classification rates inside those regions. *iClassifier*.

**Lemna specific classification:** Within the classification strategy for lemmas that can take Sethian classifiers, certain signs were only used for specific lemmas. For example, *stt* (E244) and its variants (*stt* (E244), *stt* (E245), *stt* (E246)) are primarily used in [THUNDER], [NOISE] and [STORM] related lemmas. This connection is illustrated in Figure 10. In this figure, only the lemmas *stt* (to rage), *err* (storm), *hnt* (to trouble) and *hnt-w* (disturbance) are shown with the classifiers used in these lemmas and their connections. This shows that signs using a combination of Seth, sky, weather and water are primarily used with these storm related lemmas.

This is not only true for storm related lemmas. For example, *stt* (E146) is practically only used with *stt* (Seth's animal). The same goes for the *stt* sign. This sign is practically only used in connection with *stt* (the Ombois (Seth)) and *imj-nbwt* (the one who is in Ombois (Seth)). Thus, some lemma or domain specific classification strategies were used in the Coffin Texts.

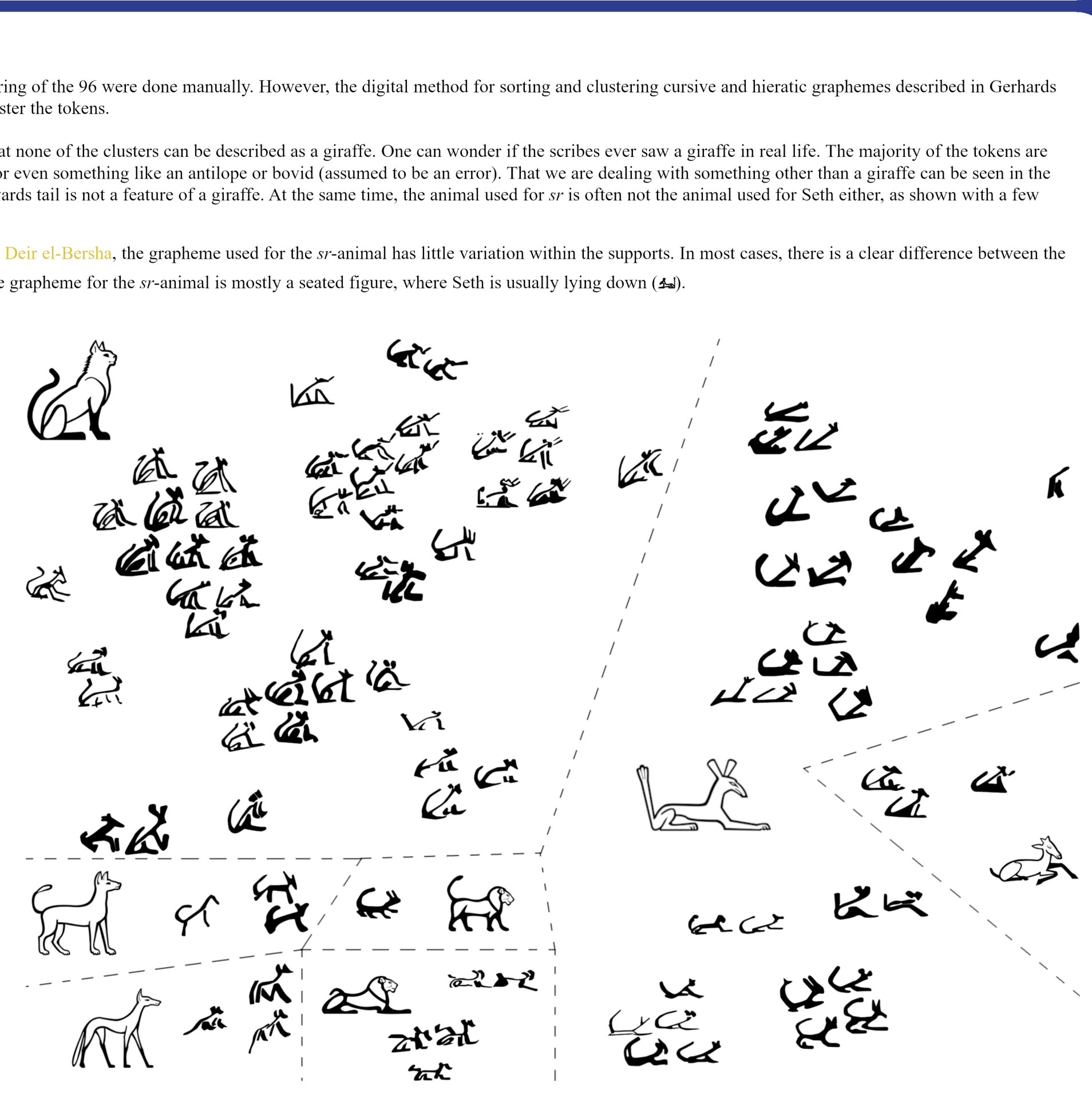


Figure 10. Classifier network for *stt* (to rage), *err* (storm), *hnt* (to trouble) and *hnt-w* (disturbance). *iClassifier*.

Due to time constraints, the collection and the clustering of the 96 were done manually. However, the digital method for sorting and clustering cursive and hieratic graphemes described in Gerhards & Konrad (2022) should be used here to sort and cluster the tokens.

**Interpretation of the *sr*-animal:** It is remarkable that none of the clusters can be described as a giraffe. One can wonder if the scribes ever saw a giraffe in real life. The majority of the tokens are either a cat (or feline) or a Sethian animal, a canine or even something like an antelope or bovid (assumed to be an error). That is, we are dealing with something other than a giraffe can be seen in the use of the upwards tail in the cursive script. The upwards tail is not a feature of a giraffe. At the same time, the animal used for *sr* is often not the animal used for Seth either, as shown with a few examples in Figure 13.

With the exception of the supports from Deir el-Bersha, the grapheme used for the *sr*-animal has little variation within the supports. In most cases, there is a clear difference between the signs for Seth and for the *sr*-animal. The grapheme for the *sr*-animal is mostly a seated figure, where Seth is usually lying down (44).

The tail of the Seth animal is habitually straight upwards, the tail of the *sr*-animal habitually curves towards the back of the animal, sometimes having a backwards tick at the top of the tail.

When dealing with the support G1T, it becomes clear that the animal is not a giraffe, but rather a cat (or feline). Nor can it be considered a Seth animal.

The supports T3C and P. Gard. II prefers using a lying down lion (44).

The graphemes that are not feline can be considered Sethian animals. It is hard to say if lying down (44) or seated (44) fits these graphemes better. Finally there are some left over signs that are more like dogs (44), or even more like antelopes or bovids. Figure 14 shows the proposed Hieroglyphic transcription for the different clusters of graphemes of the *sr*-animal.

For the cursive script used in the Coffin Texts, the standardization by de Buck of the *sr*-animal to a giraffe in Hieroglyphic transcriptions seems out of place. This standardization to a single animal Hieroglyph hides the variety of graphemes that can be used with the lemma *sr*.

**Acknowledgements and selected bibliography**

This work is supported by the Israel Academy of Sciences and Humanities & Council for Higher Education Excellence Fellowship Program for International Postdoctoral Researchers.

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**iClassifier**

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