TEXTUAL ANALYSIS—
TREEBANK ANNOTATION, SYNTACTICAL & LINGUISTIC METRICS

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A LANGUAGE IS NOT JUST WORDS. IT'S A CULTURE, A TRADITION, A UNIFICATION OF A COMMUNITY, A WHOLE HISTORY THAT CREATES WHAT A COMMUNITY IS. IT'S ALL EMBODIED IN A LANGUAGE.

Noam Chomsky

FIRST OR SECOND OR…ATTICISM

- δεικνῦσι προπερισπωμένως **Ἀττικοί**, δεικνύεσιν Ἕλληνες. Δεικνύασι δὲ **οἱ δεύτεροι Ἀττικοί** (Moeris, 194.29).

- χολάδας **οἱ πρῶτοι Ἀττικοί**, χόλικας θηλυκῶς **οἱ μέσοι**. "χολικας ἐφθάς." τὰς χόλικας ἀρσενικῶς Ἕλληνες (Moeris, 213.2)

- Κακοδαιμονεῖν· οὕτως **οἱ νόθως ἀττικίζοντες**, Ἀθηναῖοι γὰρ διὰ τοῦ α κακοδαιμονᾶν λέγουσιν." (Phrynichus the Atticist, *Eclogae* 54)

DIONYSIUS HALICARNASSUS

- **We ought to acknowledge a great debt of gratitude to the age in which we live, my most accomplished Ammaeus, for an improvement in certain fields of serious study, and especially for the considerable revival in the practice of civil oratory.** In the epoch preceding our own, the old philosophic Rhetoric was so grossly abused and maltreated that it fell into a decline. From the death of Alexander of Macedon it began to lose its spirit and gradually wither away, and in our generation had reached a state of almost total extinction… **I think that the cause and origin of this great revolution has been the conquest of the world by Rome, who has thus made every city focus its entire attention upon her.** (Dion. Hal. *Orat. Vett*. 1-3. Trans. Usher)

He is completely **pure in his vocabulary**, and is the perfect **model of the Attic dialect** (Dionysius of Halicarnassus, *Lysias* 2)

Purity of language, correct dialect, the presentation of ideas by means of **standard, not figurative expressions; Clarity, brevity, concision**, terseness, vivid representation…But there is nothing sublime or imposing about the style of Lysias. It certainly does not excite us or move us to wonder, nor does it portray pungency , intensity or fear; (Dionysius of Halicarnassus, *Lysias* 13)

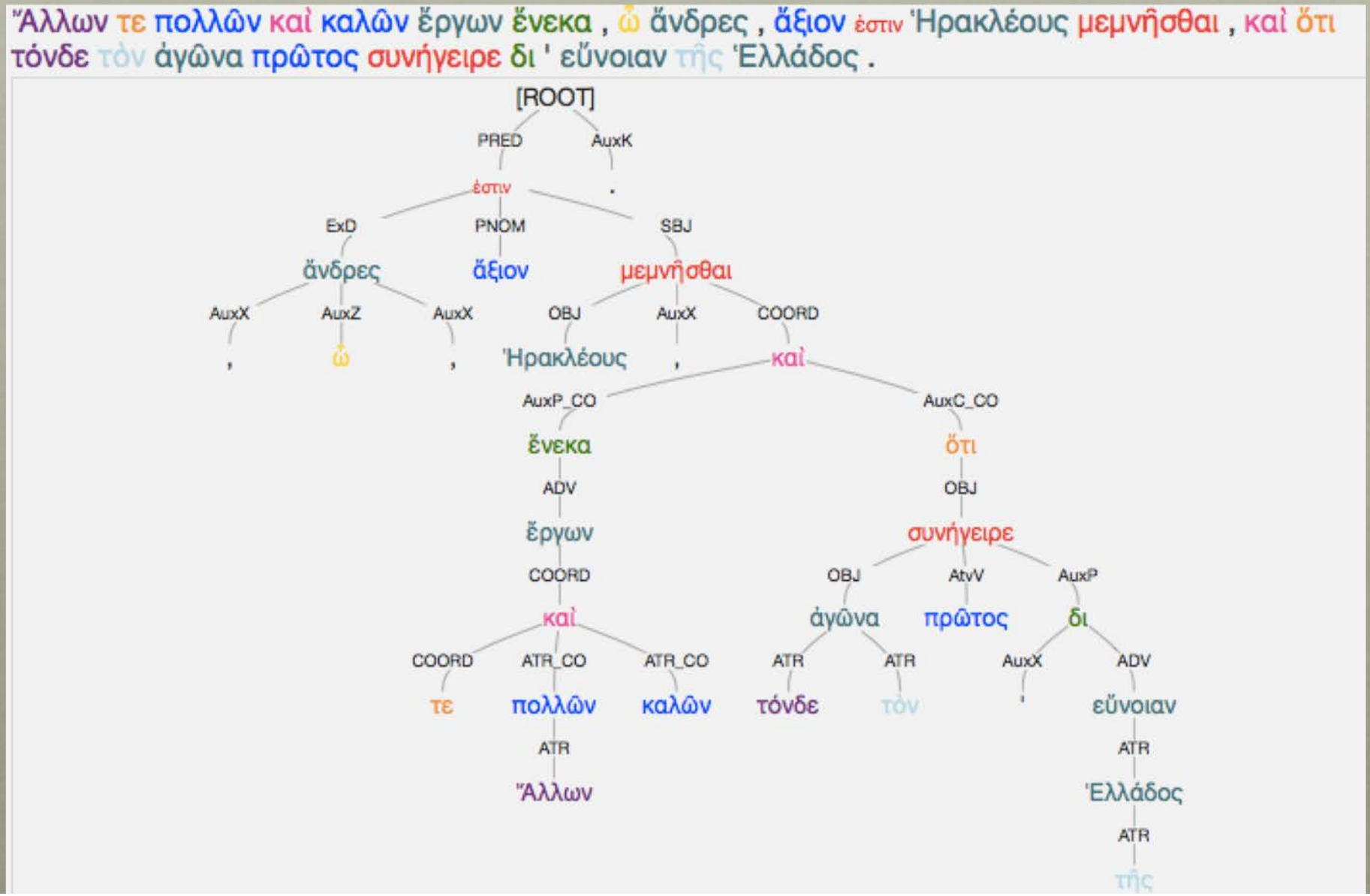
- His style has the following characteristics: it is as pure as that of Lysias; Not a word is used at random; And the language comforms closely to the most ordinary and familiar usage. Like its predecessor, it avoids the banality of archaic and obscure words, **but uses figurative language somewhat more than Lysias**, achieving a happy balance in this respect. In the matter of lucidity and vividness it is similar to that of Lysias; (Dionysius of Halicarnassus, *Isocrates* 2)

- In the first place, before rounding off the first idea (or clause if it should be called), a second idea is introduced; then a third is subjoined before the second is complete, and material belonging to the second is tacked on after the third has been completed. (Dionysius, *Demosthenes* 9)

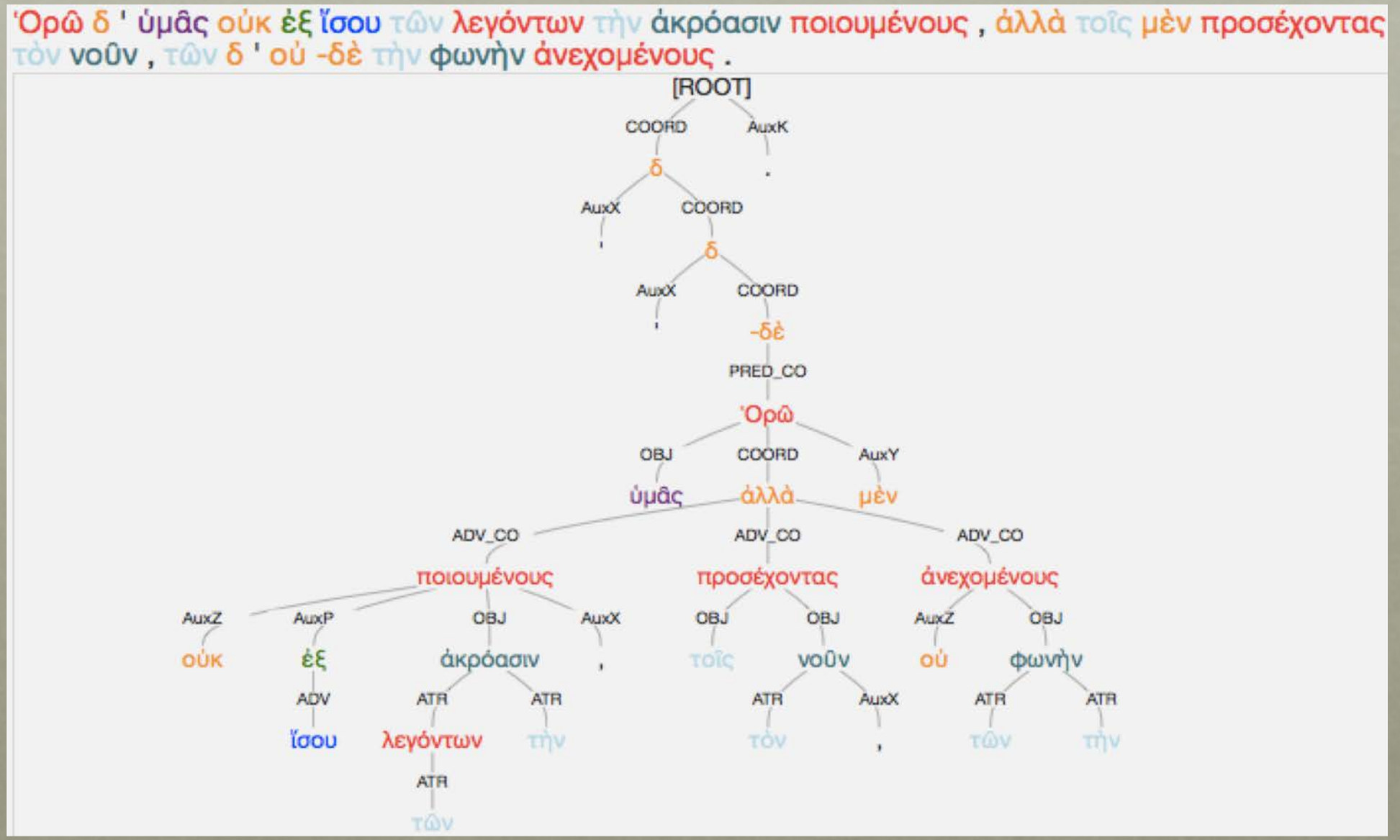
- Coming to make you my morning salutation, which should have taken the orthodox form of Rejoice, I bade you, in a very choice fit of absent-mindedness, **Be healthy**—a good enough wish in its way, but a little untimely and unconnected with that early hour. (Luc. *Laps.* 1. All translations of Lucian are by Fowler.)

- To be honest, however, their praise caused me considerable annoyance, and when they had gone and I was left alone, I reflected as follows: “So this is the only attraction in my writings, that they are **unconventional** and keep off the beaten track. While good vocabulary, **conformity to the ancient canon**, penetration of intellect, power of perception, **Attic grace**, good construction, general competence, perhaps have no place in my work. (Lucian, *Zeuxis* 2)

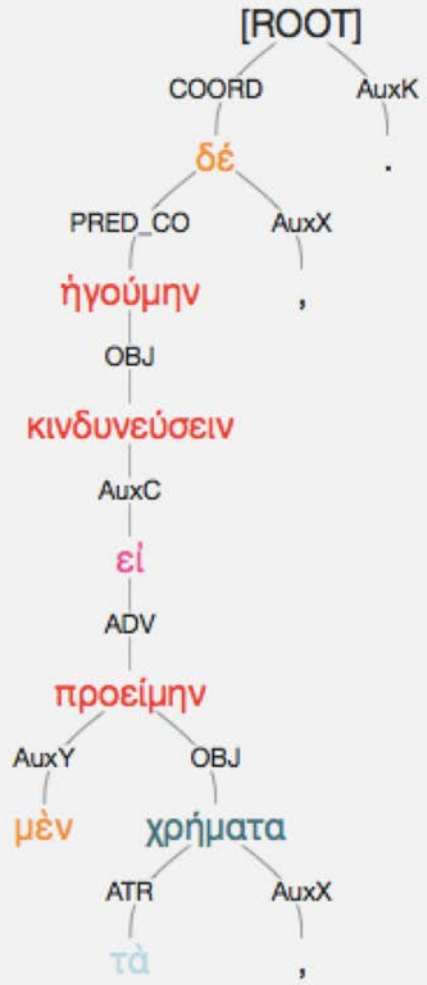
LYSIAS, *OLYMPIAKUS* 1



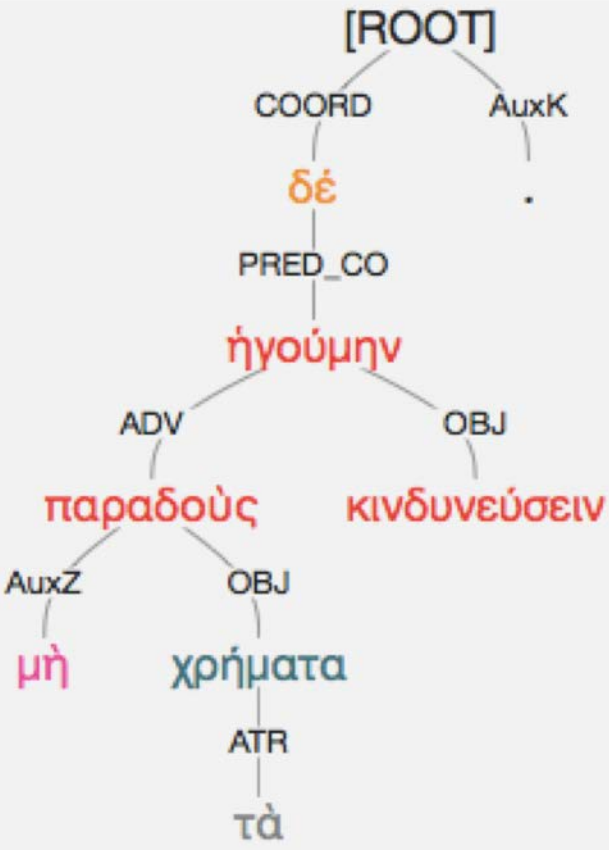
ISOCRATES, *PANEGYRICUS* 1



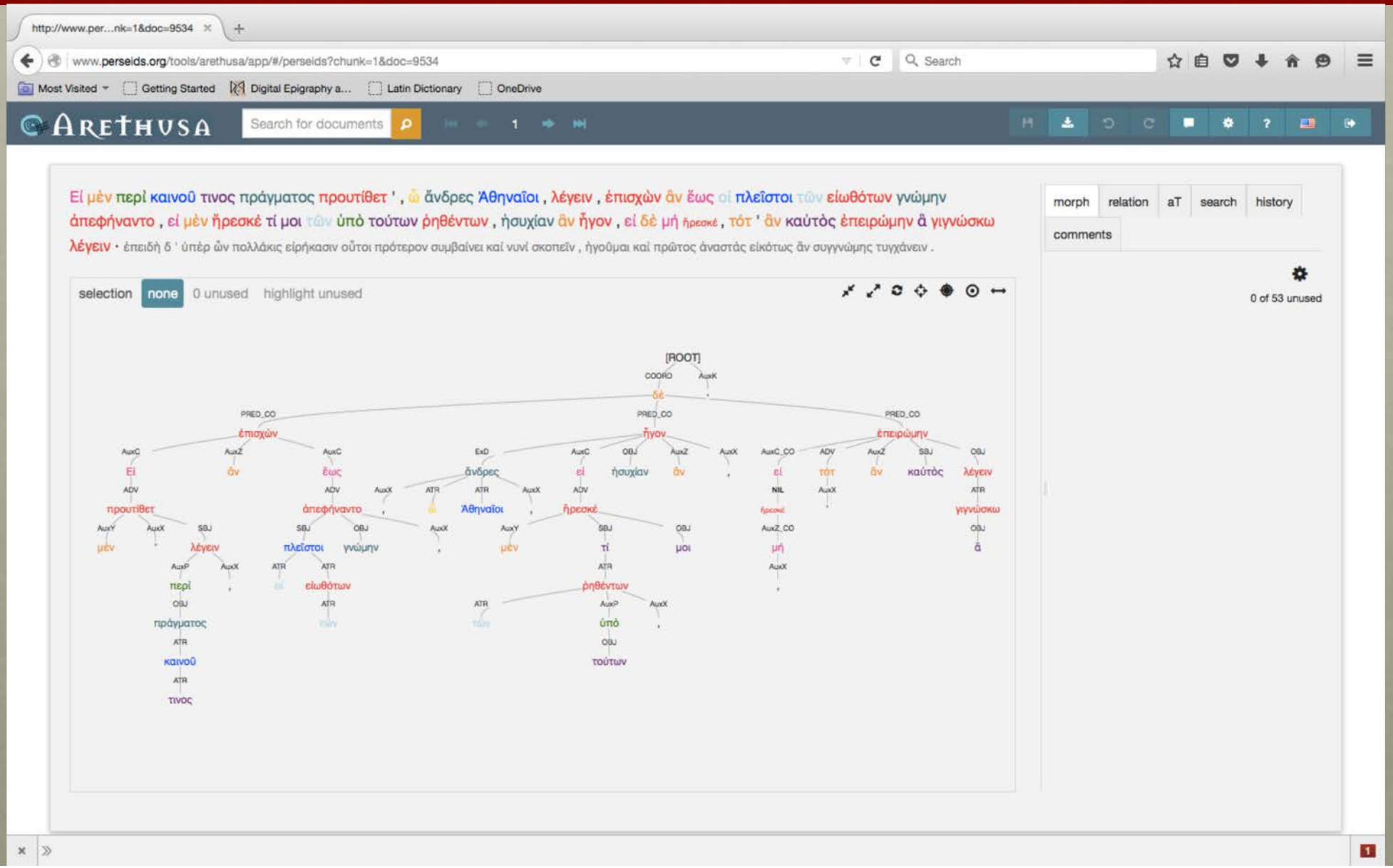
ἡγούμην δέ , εἰ μὲν προείμην τὰ χρήματα , κινδυνεύσειν



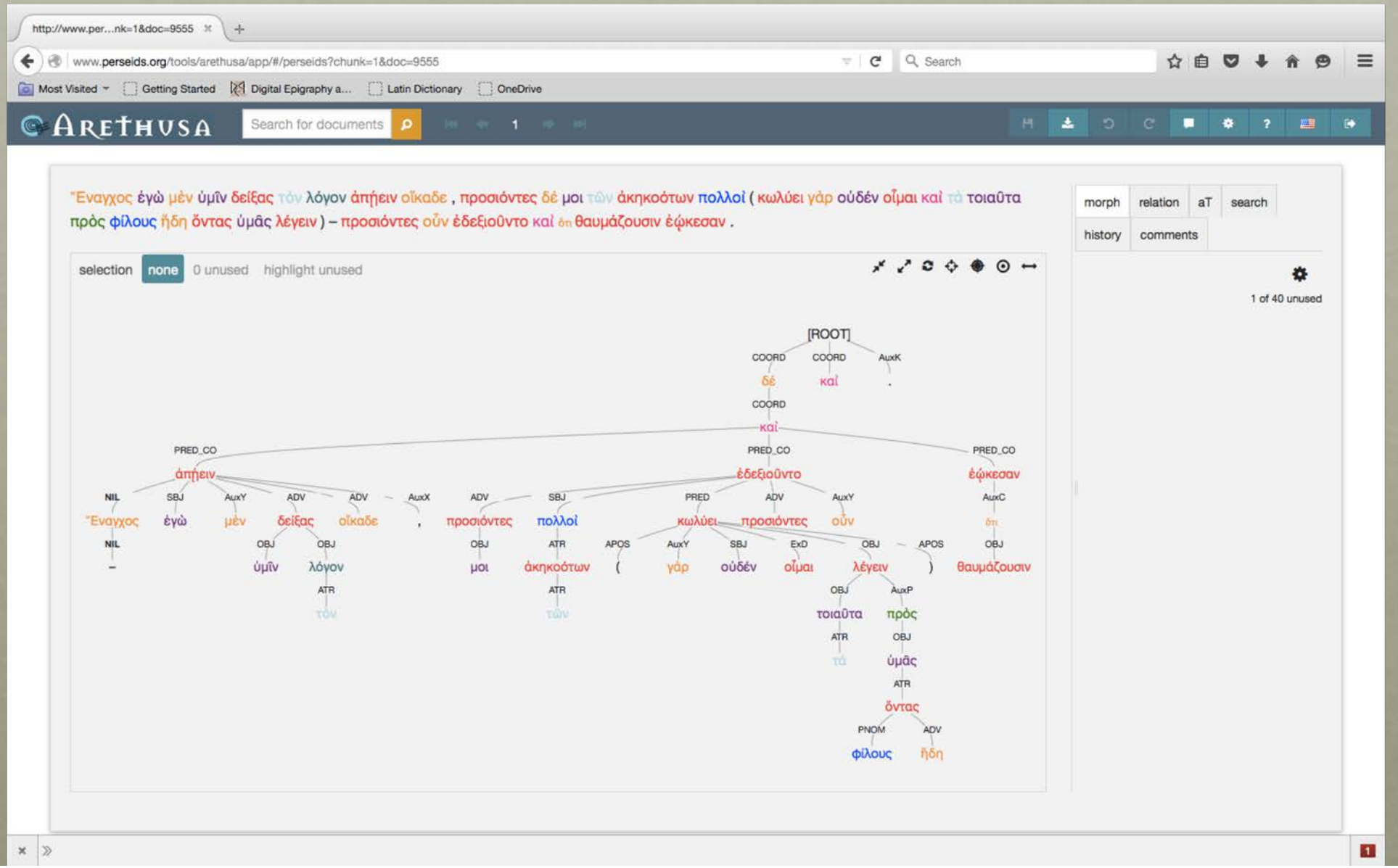
ἡγούμην δέ μὴ παραδοὺς τὰ χρήματα κινδυνεύσειν



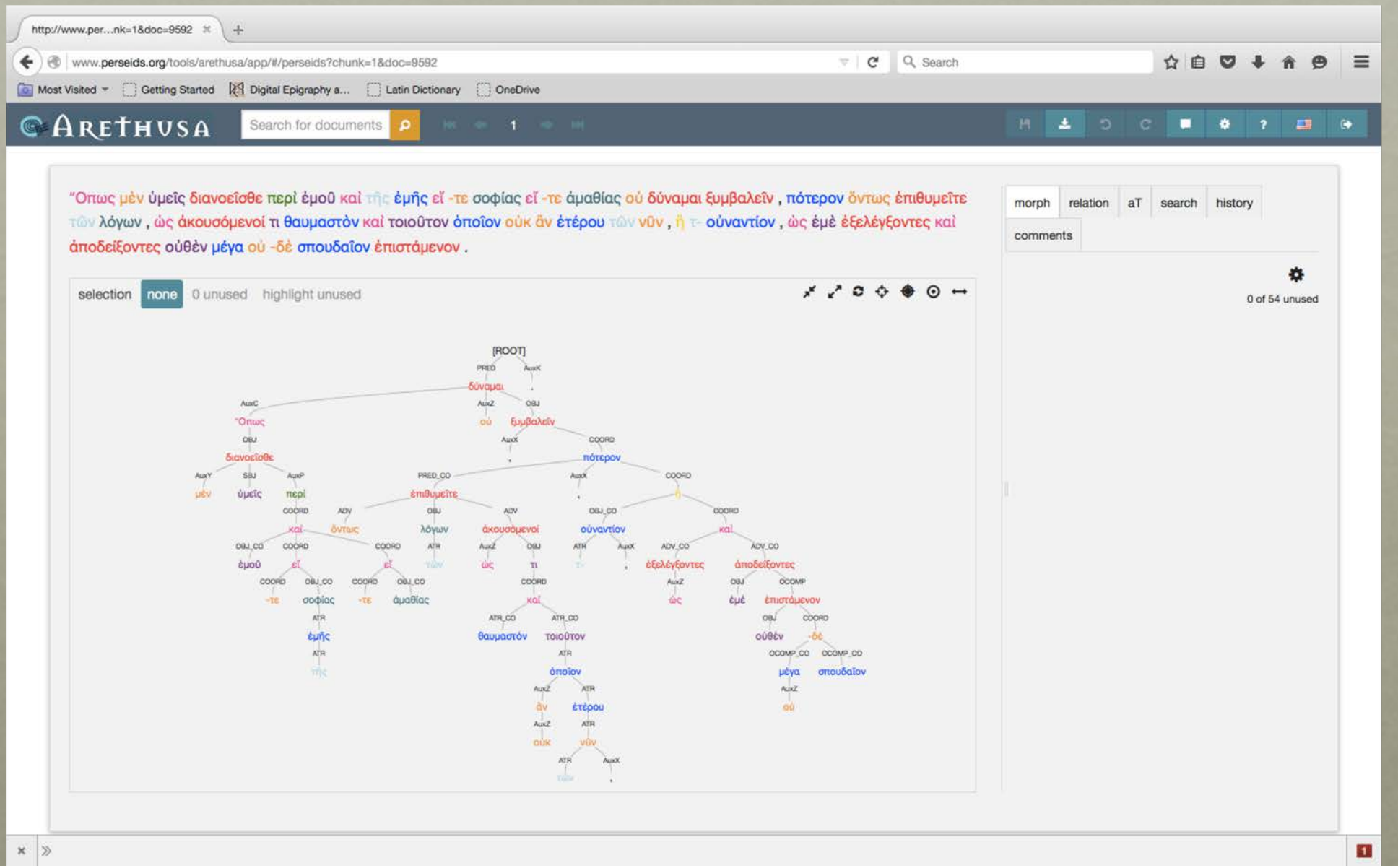
DEMOSTHENES, *PHILIPPIC* 1.1



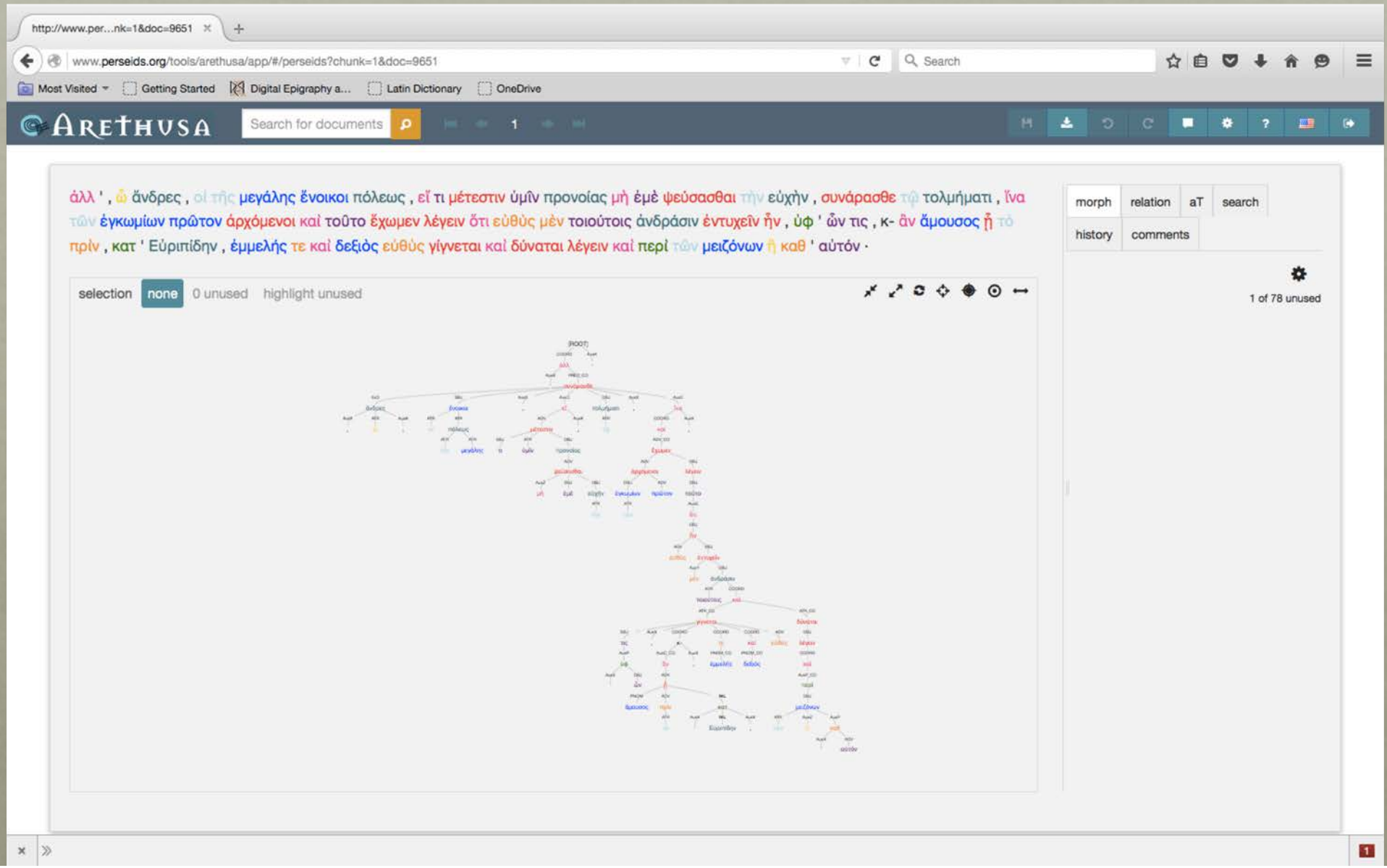
LUCIAN, *ZEUXIS* 1



DIO, *ORATIO* 42.1



AELIUS ARISTIDES, *ROME*



COMPLEXITY

- Aldt1.5
  - Word sequences
- Native xml structure
  - Xml is a tree structure
- Find the Children Of…
  - O (n) linear complexity
  - O (1) constant complexity

COMPLEXITY

```
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  <word id="1" form="οὐδὲν" lemma="οὐδείς" postag="p-s---na-" relation="OBJ" head="4"/>
  <word id="2" form="ἄν" lemma="ἄν1" postag="d--------" relation="ADV" head="4"/>
  <word id="3" form="τις" lemma="τις" postag="p-s---mn-" relation="SBJ" head="4"/>
  <word id="4" form="εἴποι" lemma="εἶπον" postag="v3saoa---" relation="PRED" head="0"/>
  <word id="5" form="τῆς" lemma="ὁ" postag="l-s---fg-" relation="ATR" head="6"/>
  <word id="6" form="ἐπινοίας" lemma="ἐπίνοια" postag="n-s---fg-" relation="OBJ" head="7"/>
  <word id="7" form="νεαρώτερον" lemma="νεαρός" postag="a-s---nac" relation="ATR" head="1"/>
  <word id="8" form="." lemma="punc1" postag="u--------" relation="AuxK" head="0"/>
</sentence>
```

The new structure that I introduced is shown below.

```
<sentence id="1" document_id="" subdoc="" span="">
  <word id="4" form="εἴποι" lemma="εἶπον" postag="v3saoa---" relation="PRED">
    <word id="1" form="οὐδὲν" lemma="οὐδείς" postag="p-s---na-" relation="OBJ">
      <word id="7" form="νεαρώτερον" lemma="νεαρός" postag="a-s---nac" relation="ATR">
        <word id="6" form="ἐπινοίας" lemma="ἐπίνοια" postag="n-s---fg-" relation="OBJ">
          <word id="5" form="τῆς" lemma="ὁ" postag="l-s---fg-" relation="ATR"/>
        </word>
      </word>
    </word>
    <word id="2" form="ἄν" lemma="ἄν1" postag="d--------" relation="ADV"/>
    <word id="3" form="τις" lemma="τις" postag="p-s---mn-" relation="SBJ"/>
  </word>
```

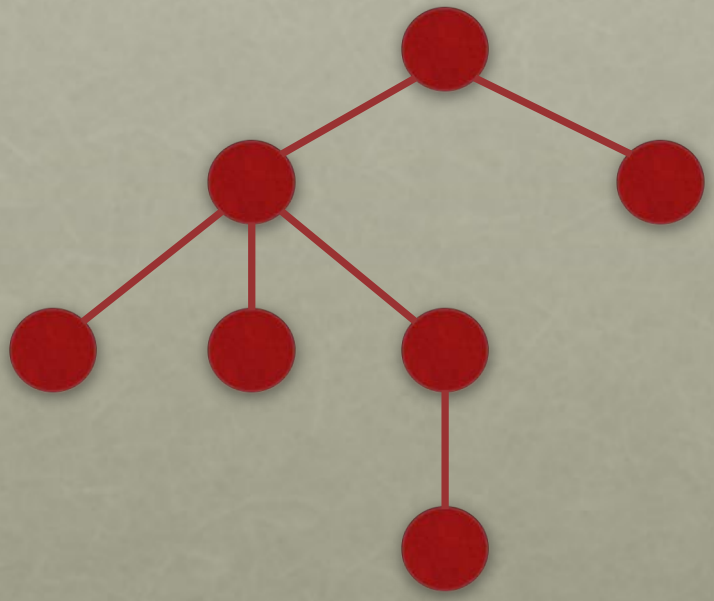
SENTENCE AS A TREE

- $S=\{n_1, n_2, n_3, \ldots n_k\}$
  - where n_i is a tree node ($n_i \in T$)
  - and T denotes the space of tree nodes
- *Each node is a tree on its own*
- *Each node has properties such as:*
  - *children of*: $T \rightarrow \{T^x\}$
  - *isATR*: $T \rightarrow \{0,1\}$

$$fS=w1\mu n1+w2\mu n2+\cdots+wk\mu nk=i=1kwi\mu ni$$

NODE-BASED METRICS

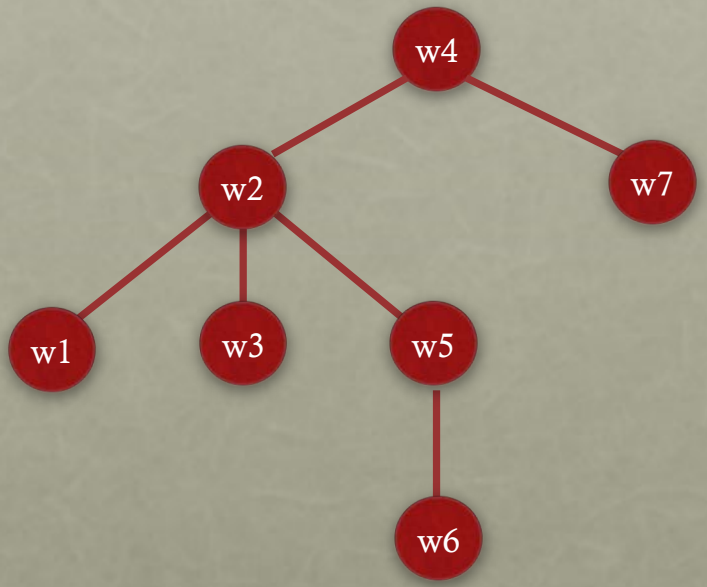
- Let's consider this example syntactically annotated sentence:



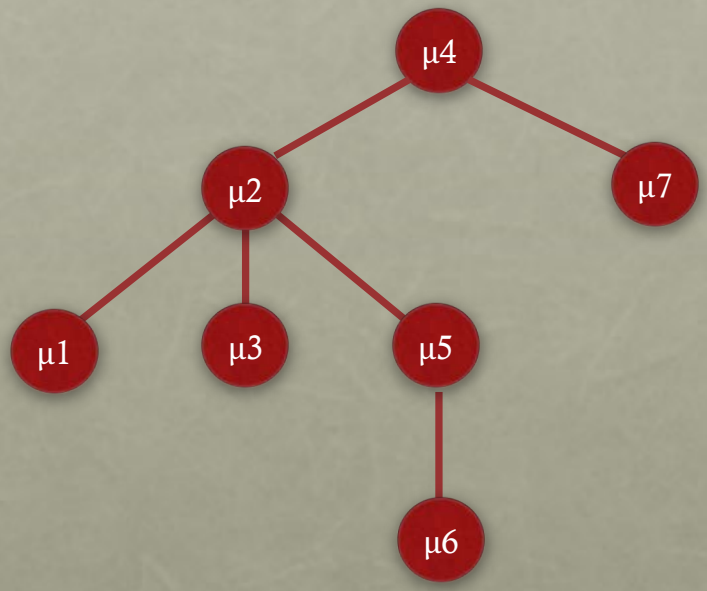
NODE-BASED METRICS

- To calculate a sentence metric we need: w and μ

Weights



Metric Values

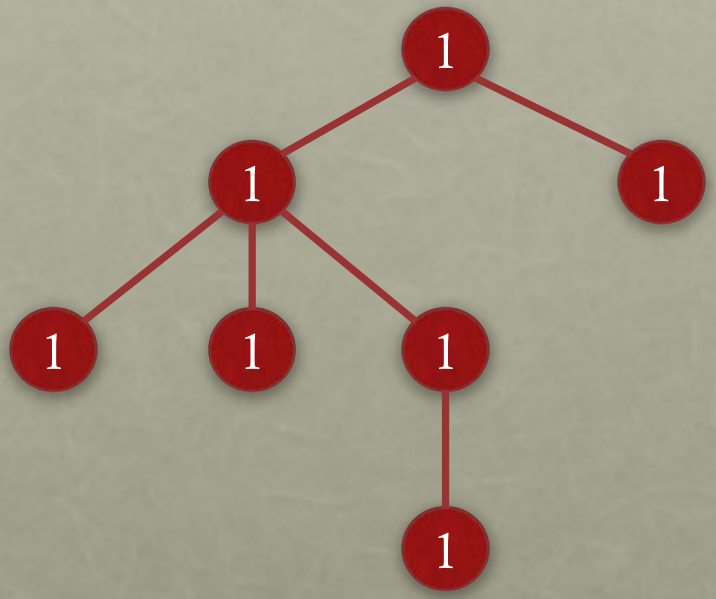


- Result: w1xμ1+w2xμ2+w3xμ3+w4xμ4+w5xμ5+w6xμ6+w7xμ7

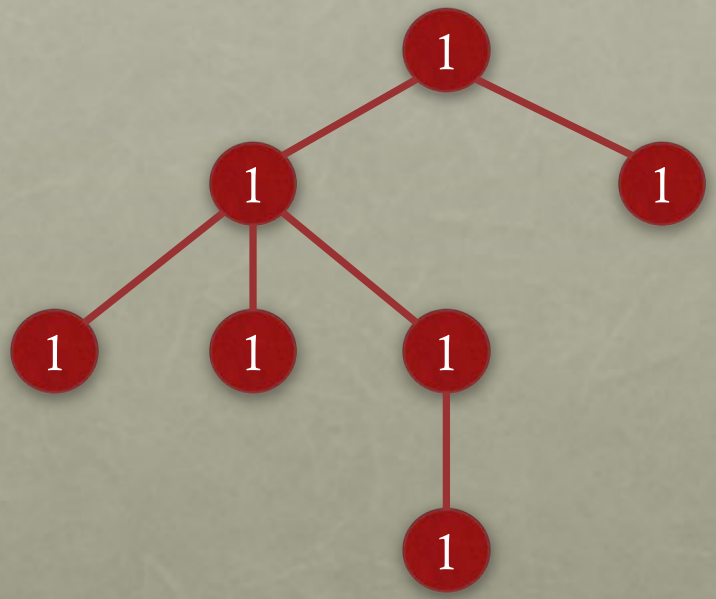
NODE-BASED METRICS

- Metric example: *Number of words*

Weights



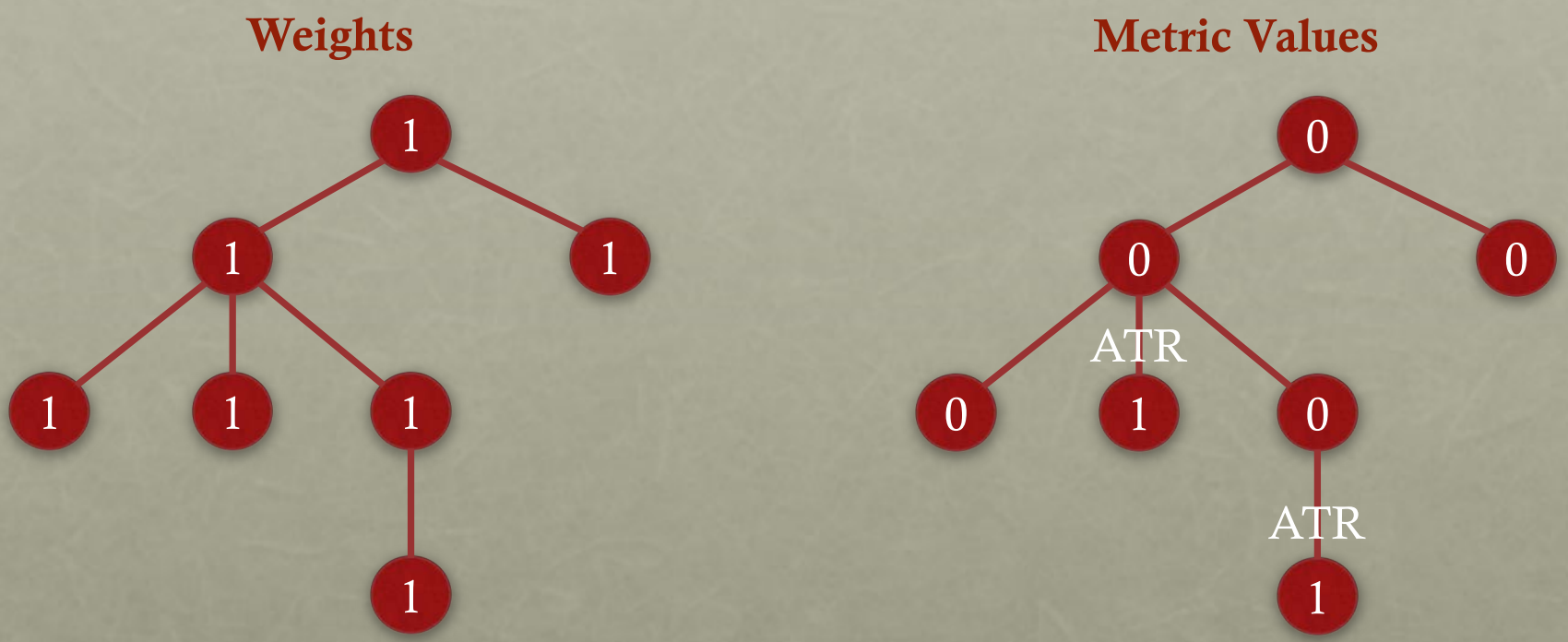
Metric Values



- Result: 1x1+1x1+1x1+1x1+1x1+1x1+1x1=7

NODE-BASED METRICS

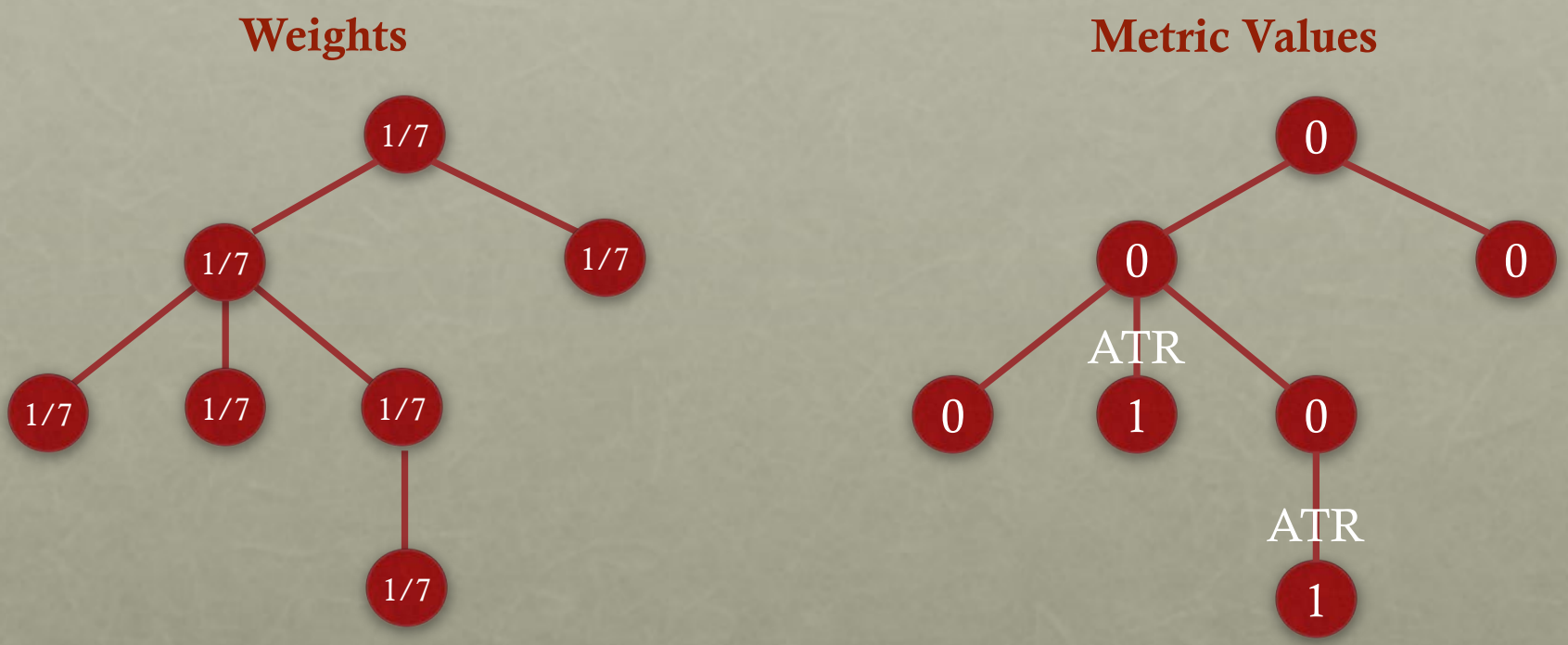
- Metric example: *Number of attributives*



- Result: 1x0+1x0+1x1+1x0+1x1+1x0+1x0=2

NODE-BASED METRICS

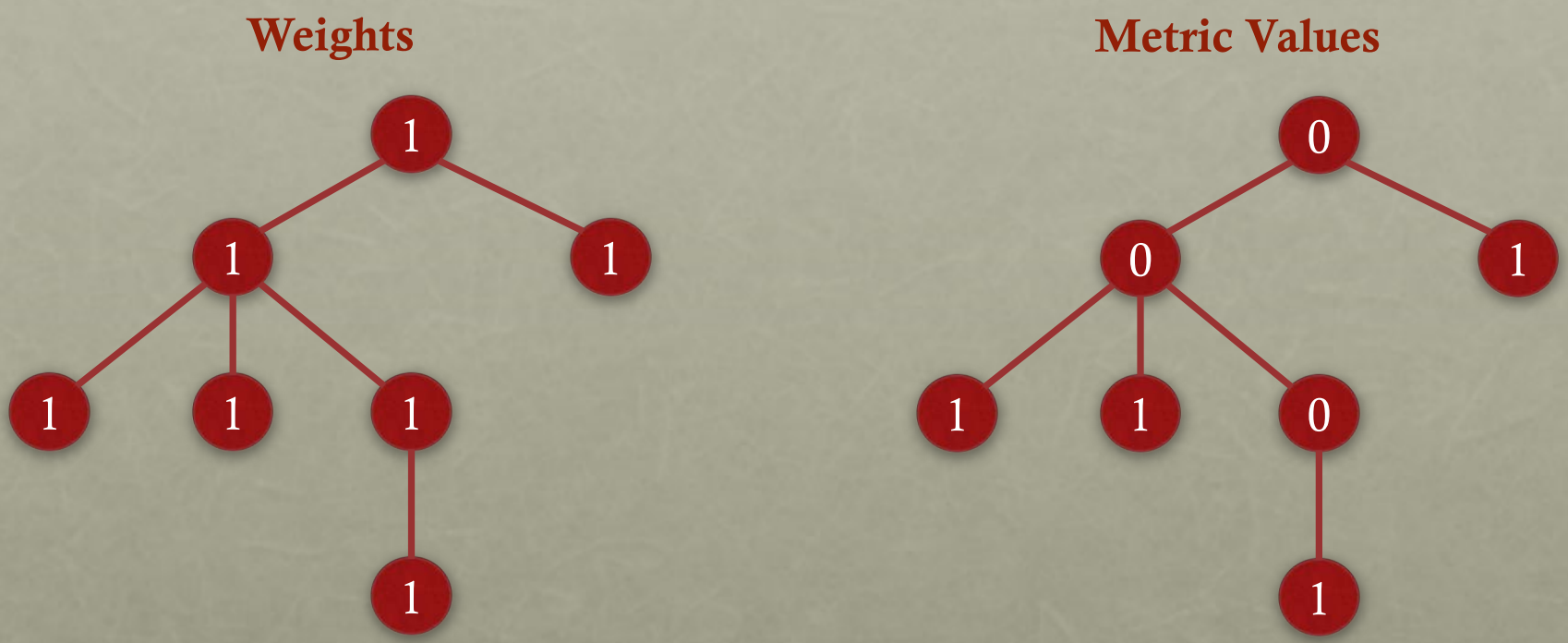
- Metric example: *Percentage of attributives*



- Result: 1/7x0+1/7x0+1/7x1+1/7x0+1/7x1+1/7x0+1/7x0=2/7

NODE-BASED METRICS

- Metric example: *Number of leaves*

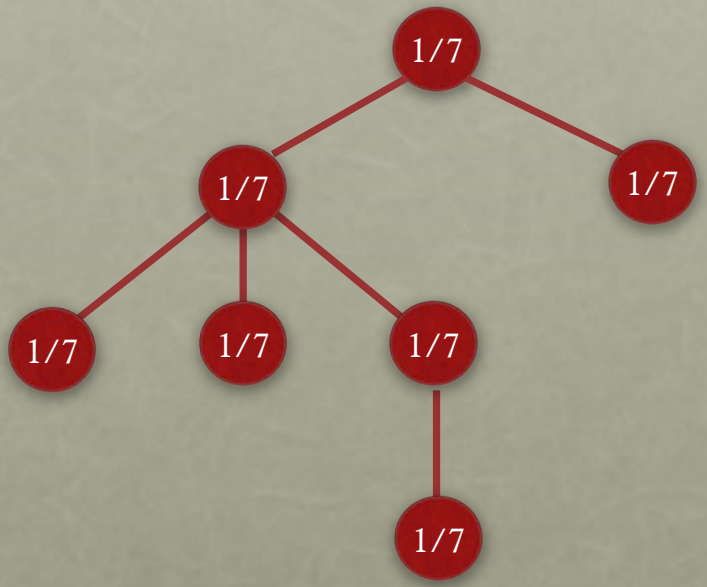


- Result: 1x0+1x1+1x1+1x0+1x1+1x1+1x0=4

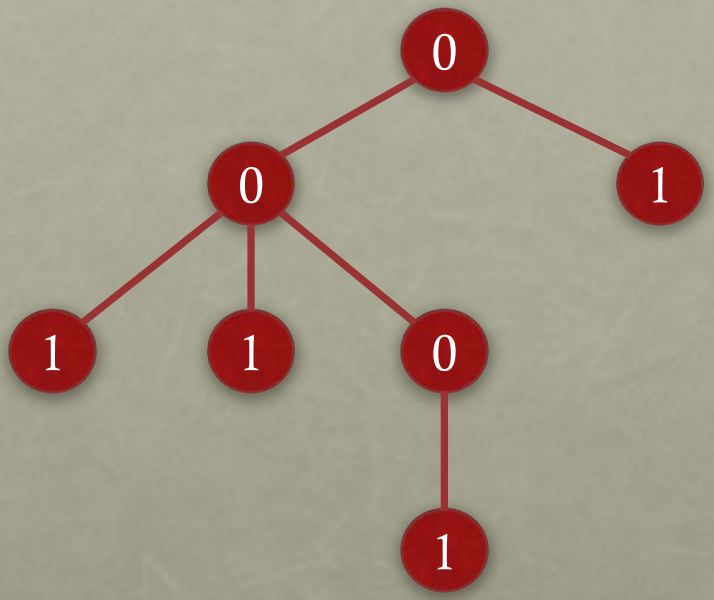
NODE-BASED METRICS

- Metric example: *Percentage of leaves*

Weights



Metric Values

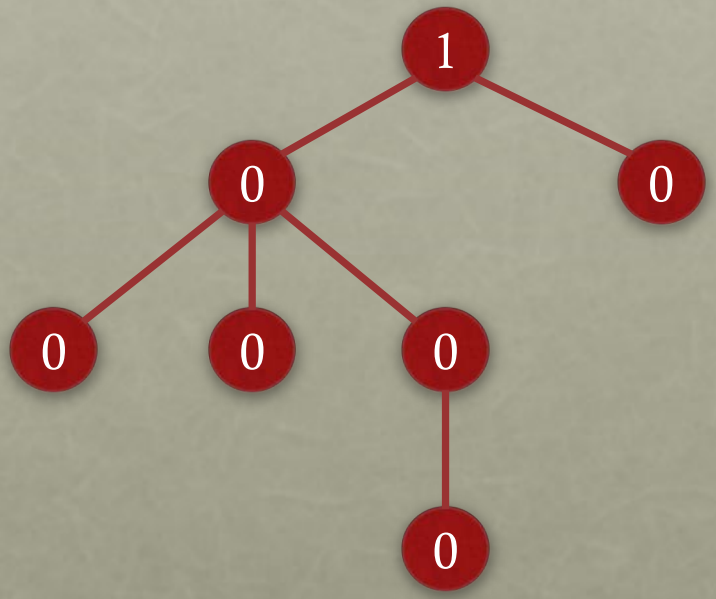


- Result: 1/7x0+1/7x1+1/7x1+1/7x0+1/7x1+1/7x1+1/7x0=4/7

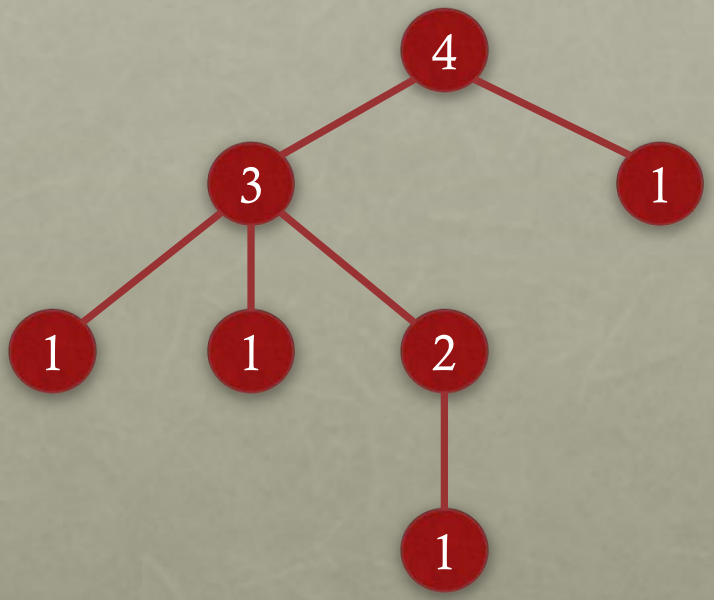
RECURSIVE NODE-BASED METRICS

- Metric example: *Height of the tree*

Weights



Metric Values

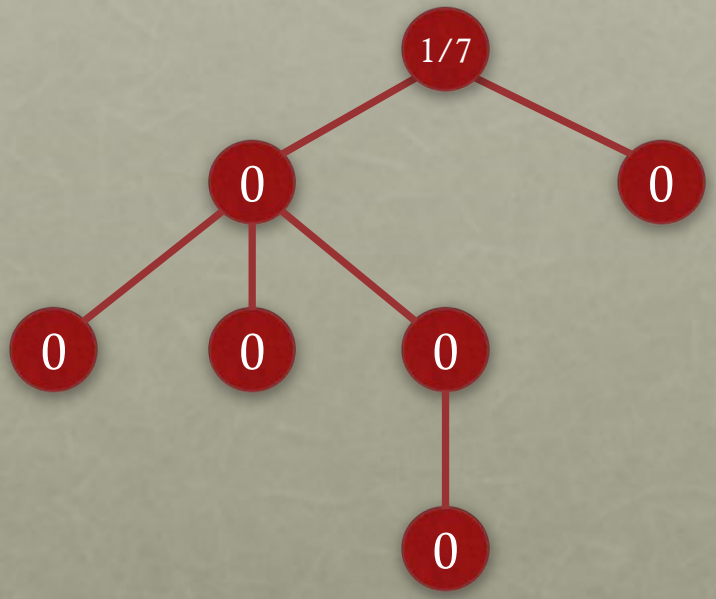


- Result: 1x4+0x3+0x1+0x1+0x1+0x2+0x1=4

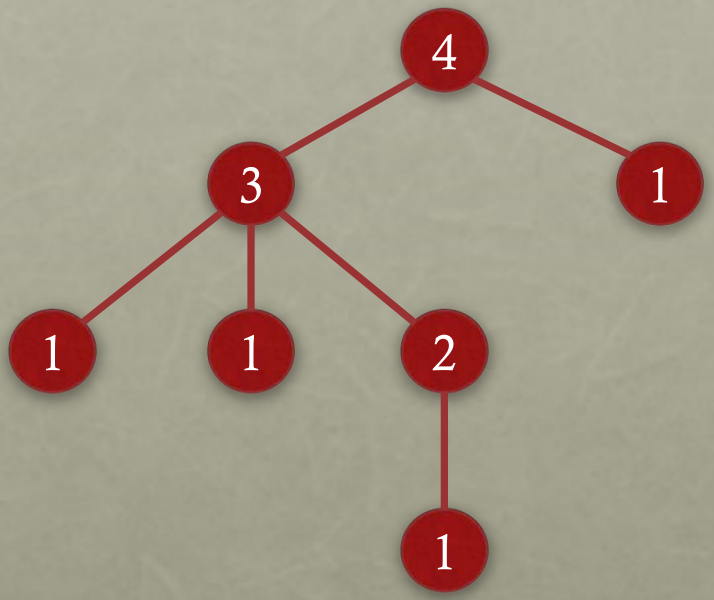
RECURSIVE NODE-BASED METRICS

- Metric example: *Height of the tree as percentage of the words*

Weights



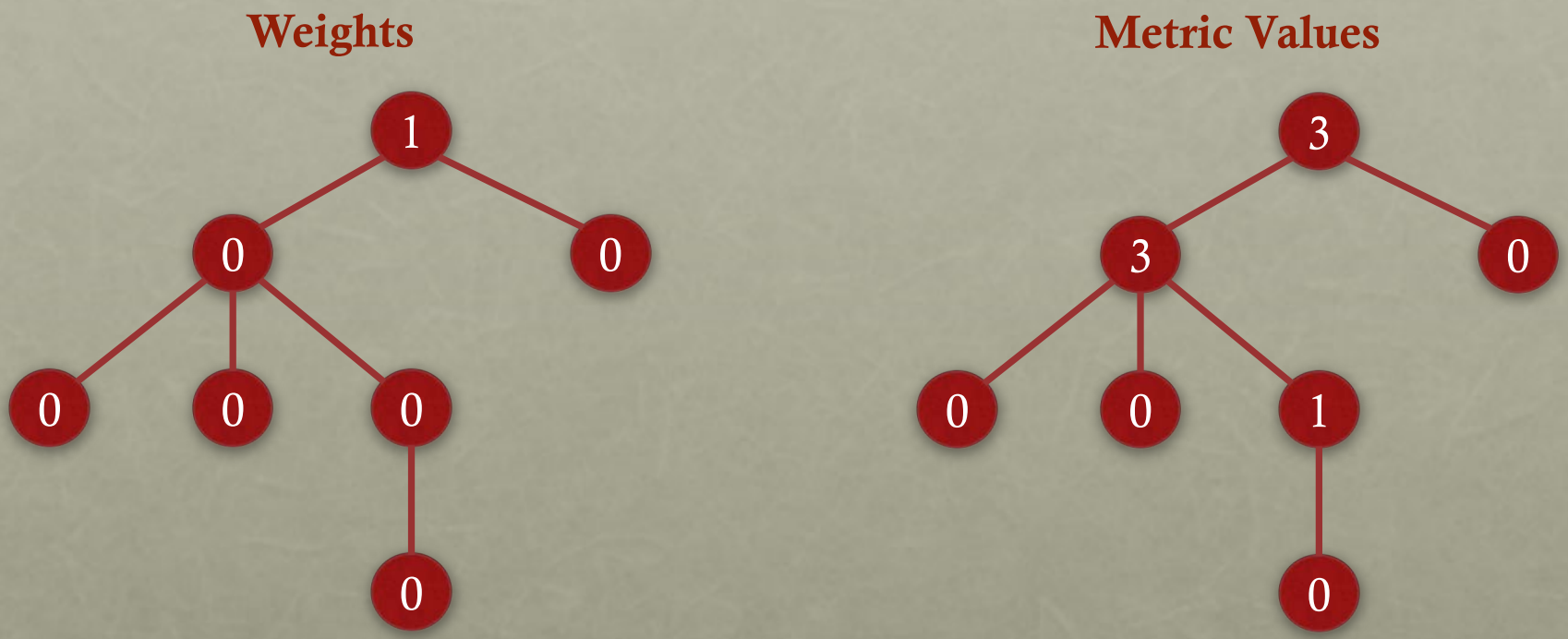
Metric Values



- Result: 1/7x4+0x3+0x1+0x1+0x1+0x2+0x1=4/7

RECURSIVE NODE-BASED METRICS

- Metric example: *Size of largest family*

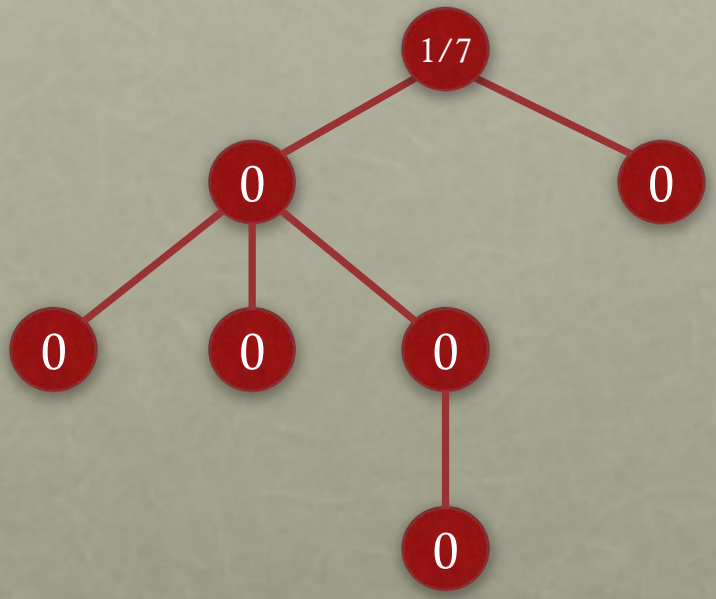


- Result: 1x3+0x3+0x0+0x0+0x0+0x1+0x0=3

RECURSIVE NODE-BASED METRICS

- Metric example: *Size of largest family as percentage of the words*

Weights



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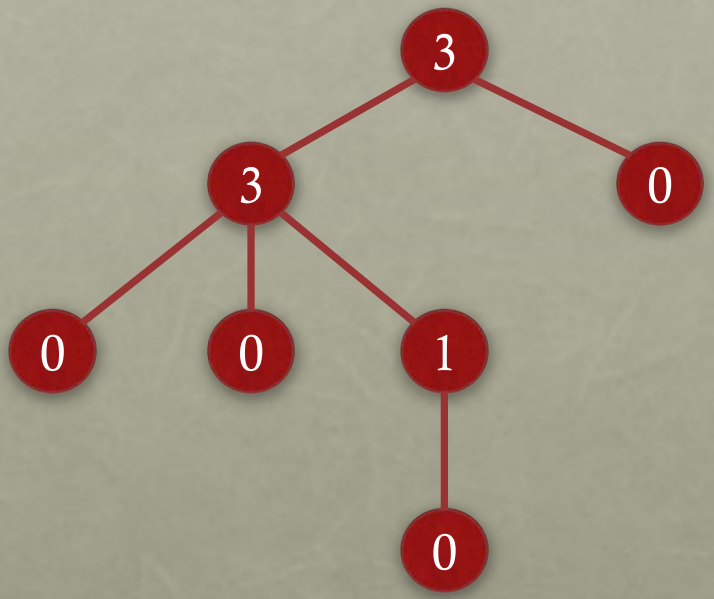

- Result: 1/7x3+0x3+0x0+0x0+0x0+0x1+0x0=3/7

JAVASCRIPT

```
m=new NodeMetric('Percentage of Verb Attributives');

m.weight=function(n)
{
        return 1/n.getRoot().getNumOfWords();
};

m.metric=function(n)
{
    if(n.getRelation()=='ATR' && n.getPosTag()[0]=='v')
        return 1;
    else return 0;
};
```

METRICS

- Height of the tree as percentage of the nodes
- Width of the tree as percentage of the nodes
- Number of leaves as percentage of the nodes
- Number of attributives as percentage of the nodes
- Largest family size as percentage of the nodes
- Verb Attributives as percentage of the nodes
- Percentage of δέ coordinates
- Number of nodes under ATR as percentage of the nodes
- Adjective Attributives as percentage of the nodes

DATA

0.4000	0.3700	0.2000	0.1300	0.2700	0	0.0300	0	0.4000
0.7500	0.2500	0.7500	0.7500	0.2500	0	0	0	0.2500
0.5000	0.3300	0.2800	0.2200	0.0600	0	0	0.1100	0.0600
0.4400	0.1600	0.2400	0.0800	0.1800	0	0.0800	0.0400	0.3500
0.4700	0.2700	0.3300	0.2700	0.0700	0	0	0	0.0700
0.3500	0.3200	0.1800	0.0900	0.1800	0.0300	0.0300	0.0900	0.3400
0.5600	0.4400	0.3300	0.3300	0.1100	0	0	0	0.1100
0.4700	0.2400	0.3100	0.1100	0.3800	0.0500	0.0500	0.1300	0.6500
0.4700	0.1600	0.2400	0.1600	0.2100	0	0	0.0300	0.2100
0.5000	0.1500	0.2500	0.1000	0.1900	0.0600	0.0400	0.0200	0.3300
0.5000	0.4100	0.2700	0.1400	0	0	0	0.0500	0
0.5800	0.2500	0.4200	0.3300	0.2500	0	0	0	0.2500
0.4700	0.1500	0.2600	0.1300	0.2100	0	0.0200	0.0900	0.2800
0.4600	0.3800	0.3100	0.3100	0.3800	0	0	0	0.6200
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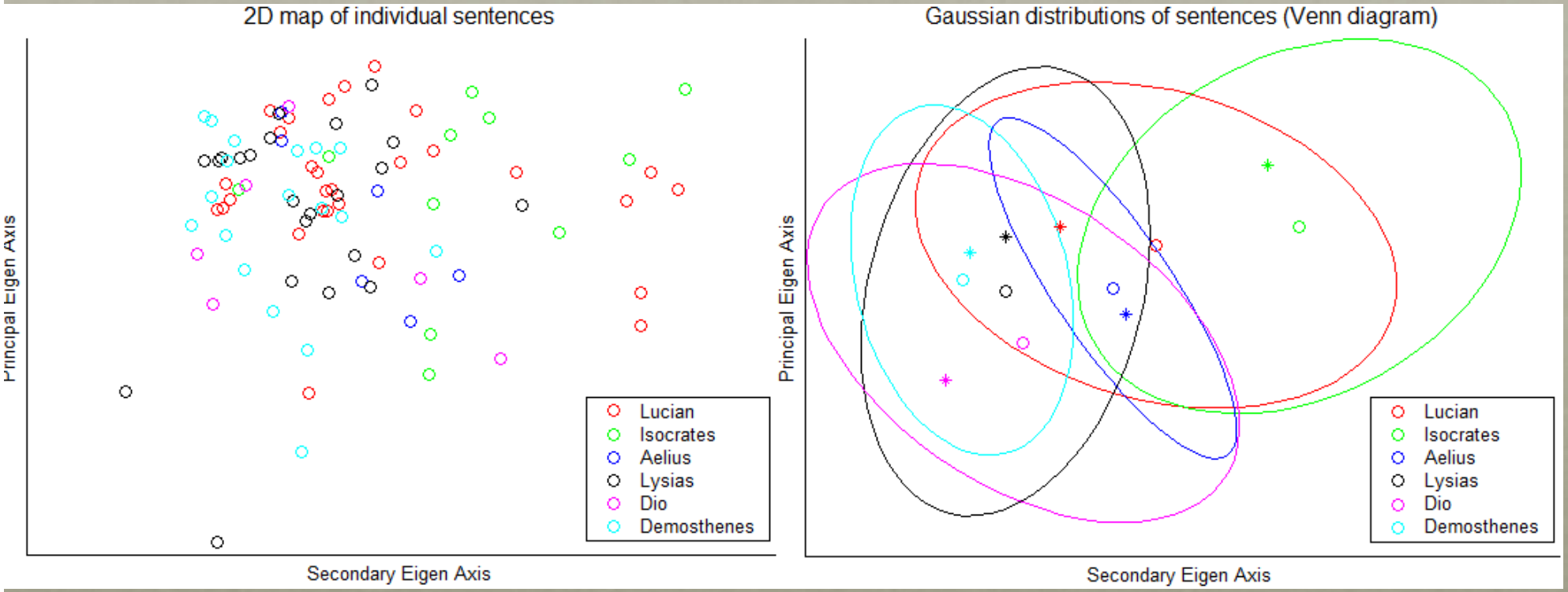
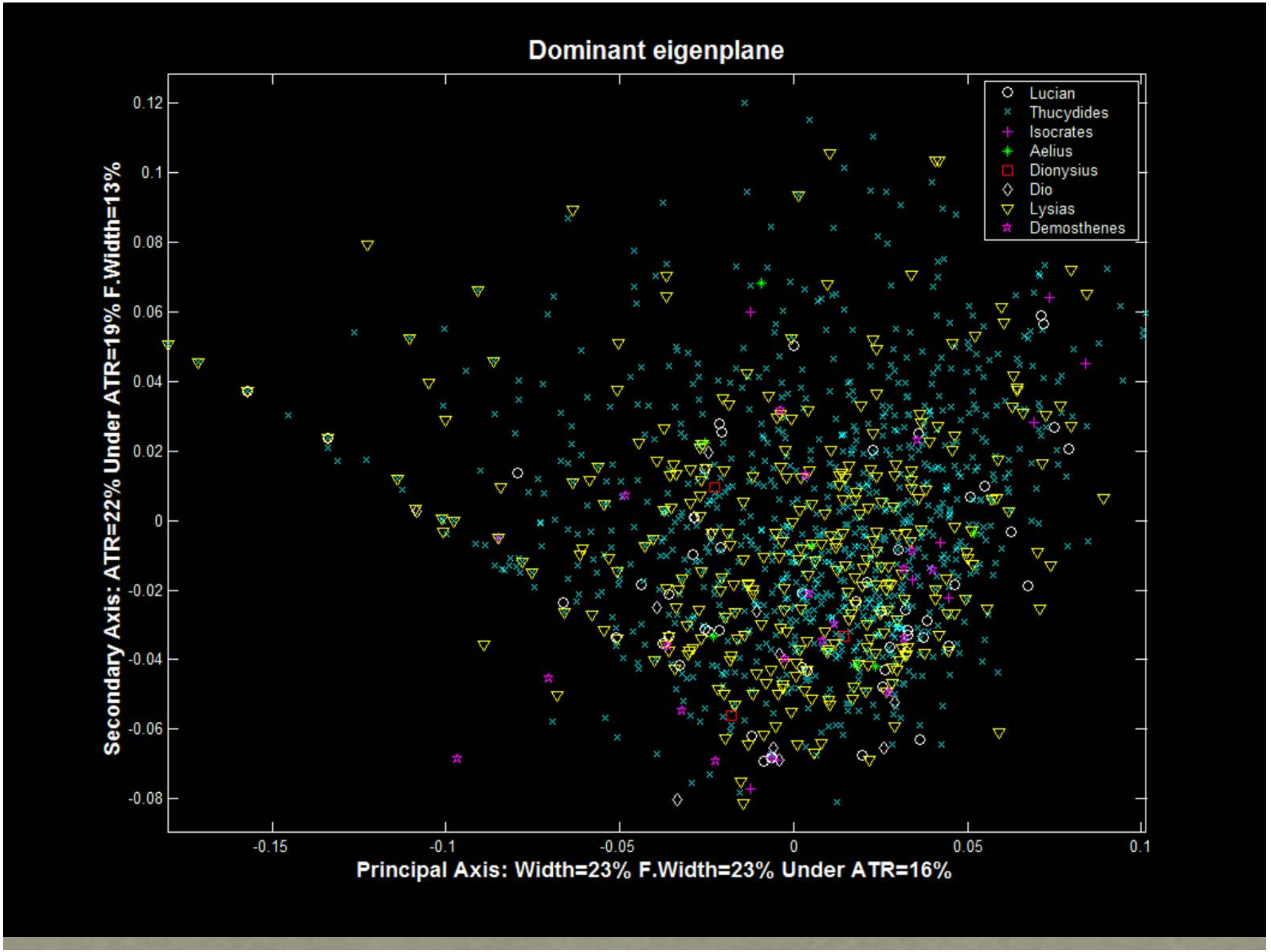
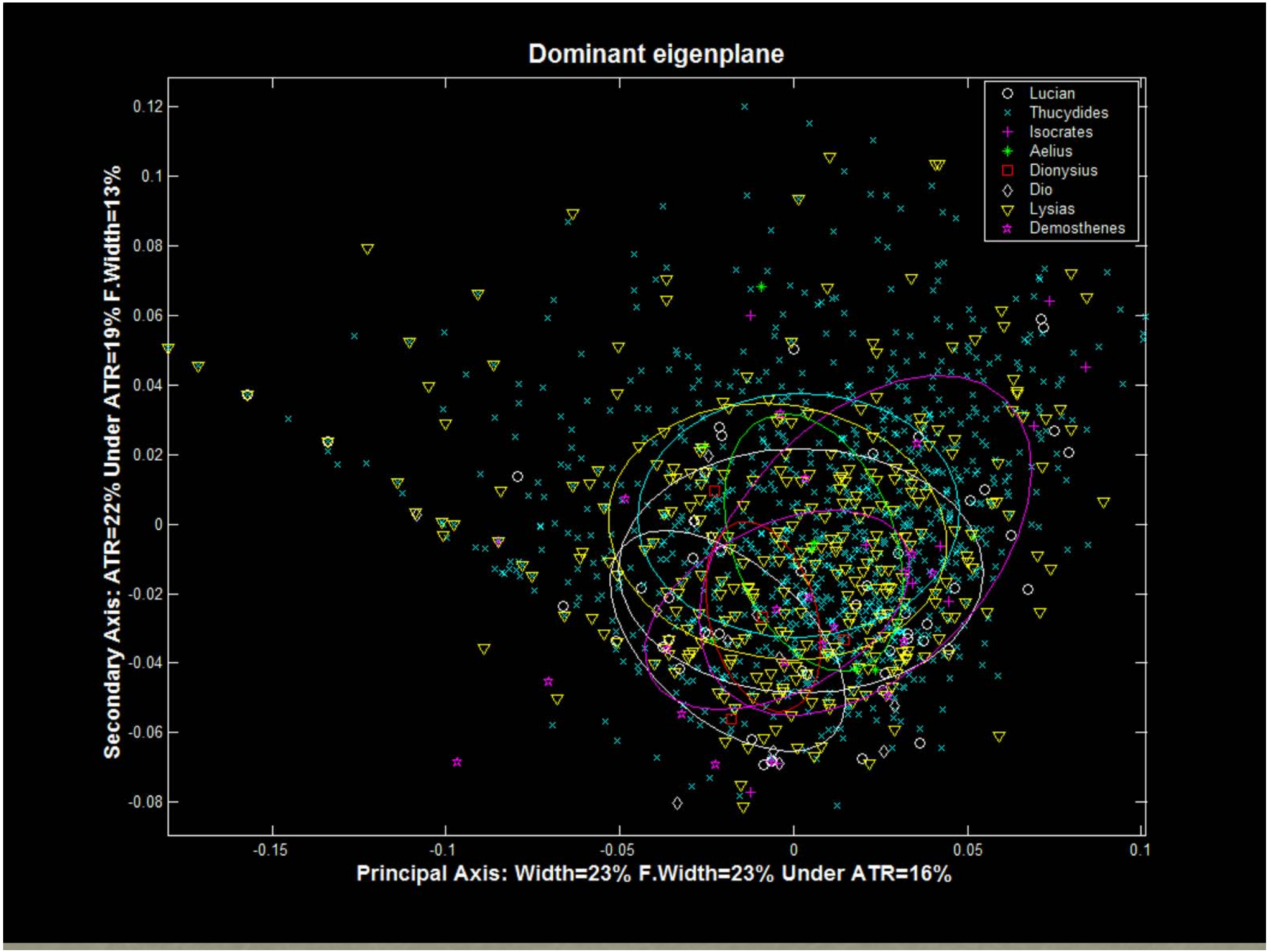
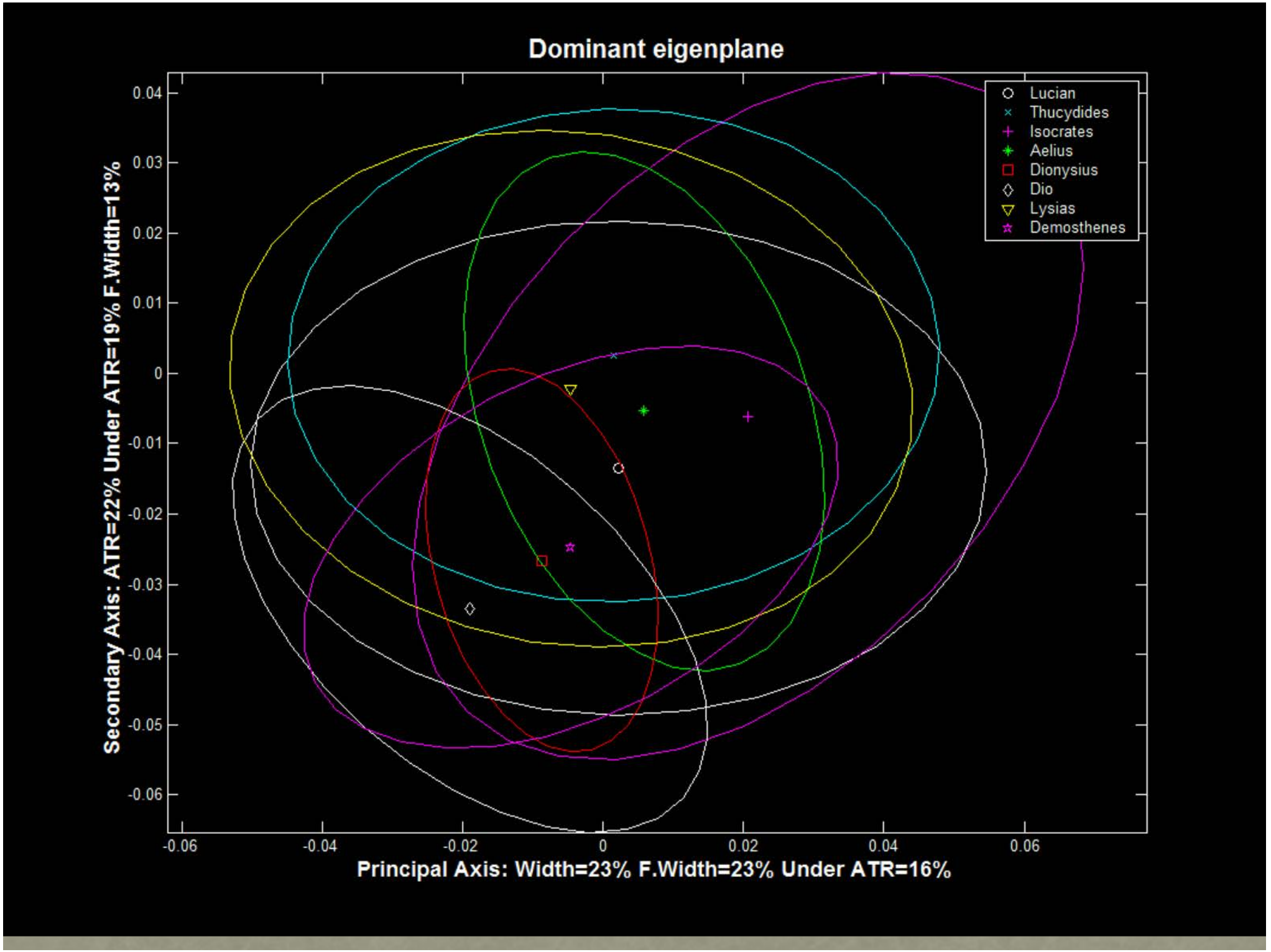
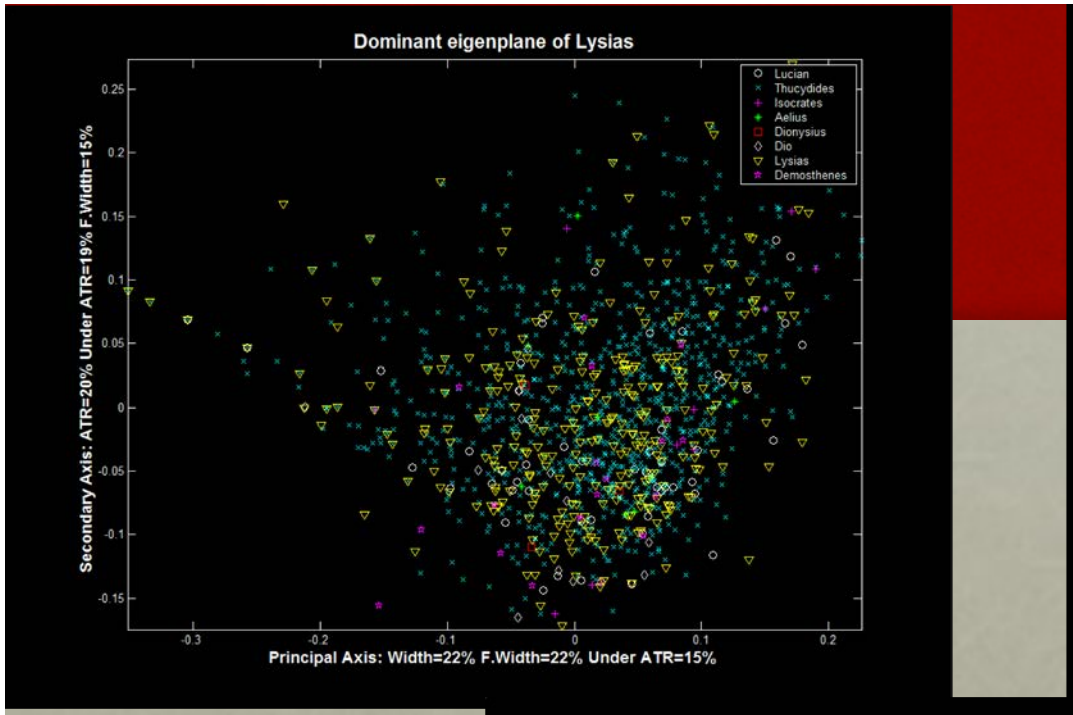
0.4400	0.3300	0.4400	0.3300	0.2200	0	0.1100	0	0.3300
0.5000	0.2100	0.3600	0.2900	0.2900	0	0	0	0.4300
0.5800	0.2500	0.4200	0.4200	0.1700	0	0	0	0.1700
0.6000	0.4000	0.6000	0.6000	0	0	0	0.2000	0
0.4400	0.2200	0.2600	0.1500	0.1100	0	0.0400	0	0.1500
0.5800	0.4200	0.4200	0.4200	0	0	0	0.0800	0
0.5500	0.1900	0.2600	0.2600	0.2900	0.0300	0.0600	0.0300	0.6100
0.4800	0.2300	0.1900	0.1900	0.1900	0	0	0	0.1900
0.5300	0.1600	0.3400	0.1600	0.1600	0	0.0300	0.0500	0.1600
0.5000	0.1500	0.1800	0.0600	0.1300	0.0100	0	0.0200	0.2900
0.4800	0.2000	0.4400	0.2000	0.0400	0	0	0.0400	0.0400
0.5500	0.3600	0.4500	0.4500	0.2700	0.0900	0.0900	0	0.2700
0.5500	0.3600	0.3600	0.3600	0.1800	0	0.0900	0	0.1800
0.4300	0.3300	0.2400	0.1400	0.2900	0.1000	0	0	0.6700
0.4900	0.2300	0.1300	0.0900	0.1600	0	0.0100	0	0.1800
0.4200	0.2300	0.1600	0.0800	0.2500	0.0300	0.0200	0.0500	0.6100
0.4300	0.2000	0.2500	0.1200	0.2200	0	0.0200	0.0400	0.3100
0.3500	0.3000	0.2600	0.1300	0.2600	0.0500	0	0	0.3600
0.4400	0.3300	0.4400	0.4400	0.4400	0.2500	0	0	0.7500
0.5300	0.1800	0.2600	0.1100	0.2100	0.0300	0.0300	0	0.2400
0.5700	0.3600	0.3600	0.3600	0.1400	0	0.0700	0	0.1400
0.4400	0.2800	0.3600	0.1200	0.2400	0.0400	0	0.0400	0.3300
0.4700	0.1400	0.2300	0.0600	0.1100	0.0100	0.0500	0.0100	0.3500
0.4700	0.3000	0.1700	0.1700	0.1300	0.0300	0.0300	0	0.5000
0.5300	0.2100	0.4200	0.3200	0.1100	0	0	0.0500	0.1100
0.5500	0.2300	0.2000	0.1100	0.1400	0.0200	0.0200	0.0200	0.5900
0.3600	0.4500	0.2700	0.2700	0.3600	0.1000	0.1000	0	0.6000
0.5000	0.2500	0.2900	0.1400	0.0400	0	0	0.0700	0.0400

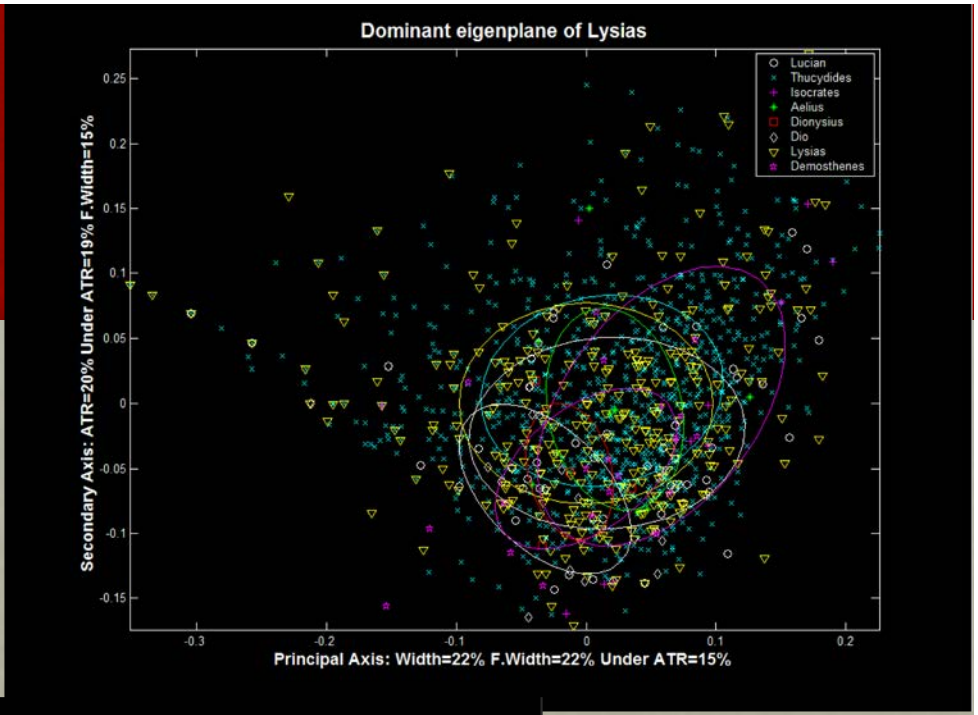

2D map of individual sentences
Principal Eigen Axis
Secondary Eigen Axis
Lucian
Isocrates
Aelius
Lysias
Dio
Demosthenes
Gaussian distributions of sentences (Venn diagram)
Principal Eigen Axis
Secondary Eigen Axis
Lucian
Isocrates
Aelius
Lysias
Dio
Demosthenes

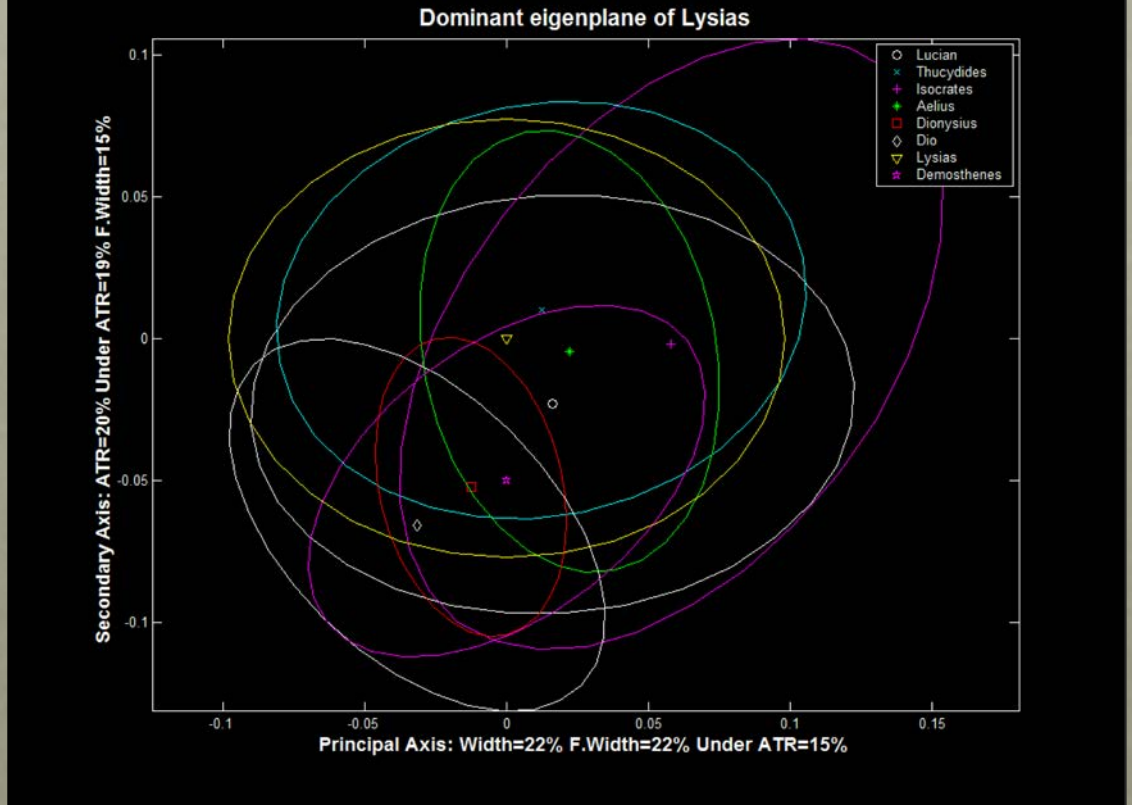

Dominant eigenplane
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: ATR=22% Under ATR=19% F.Width=13%
Principal Axis: Width=23% F.Width=23% Under ATR=16%
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.15
-0.1
-0.05
0
0.05
0.1

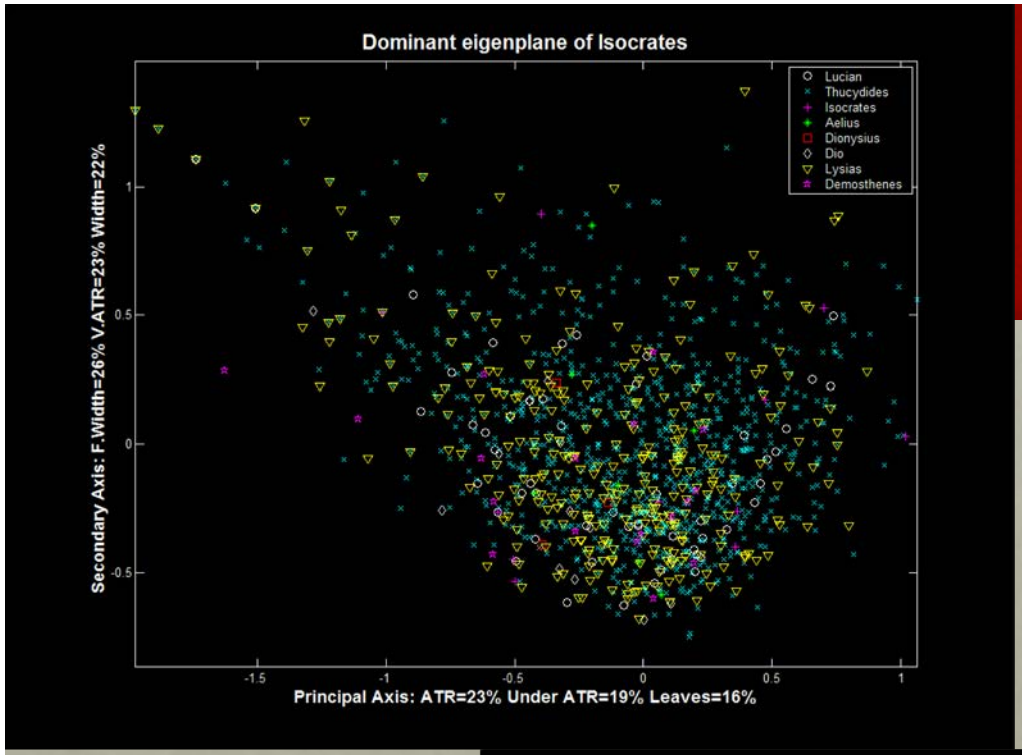

Dominant eigenplane
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: ATR=22% Under ATR=19% F.Width=13%
Principal Axis: Width=23% F.Width=23% Under ATR=16%
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.15
-0.1
-0.05
0
0.05
0.1

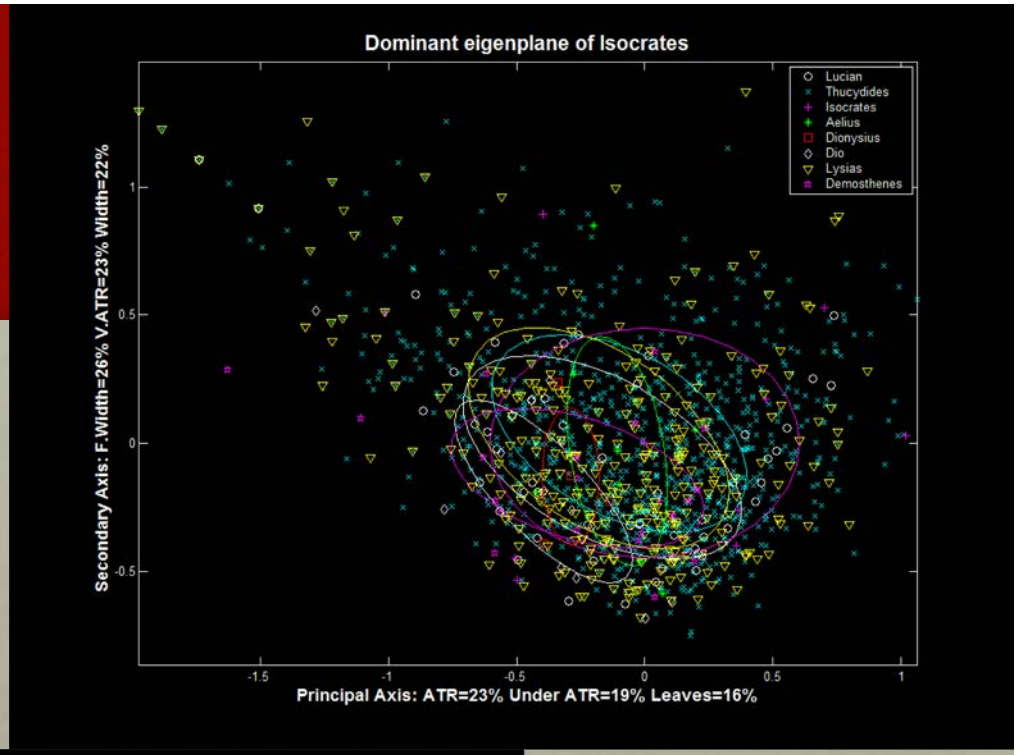

Dominant eigenplane
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: ATR=22% Under ATR=19% F.Width=13%
Principal Axis: Width=23% F.Width=23% Under ATR=16%
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.06
-0.04
-0.02
0
0.02
0.04
0.06

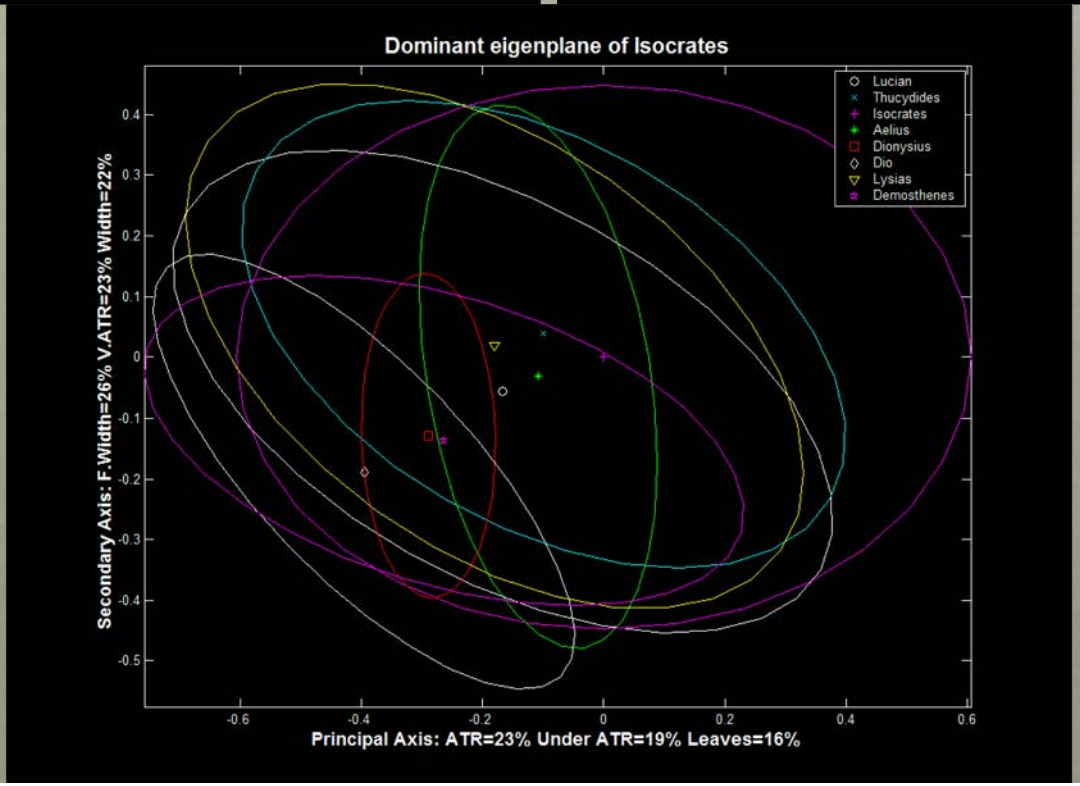

Dominant eigenplane of Lysias
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: ATR=20% Under ATR=19% F.Width=15%
Principal Axis: Width=22% F.Width=22% Under ATR=15%

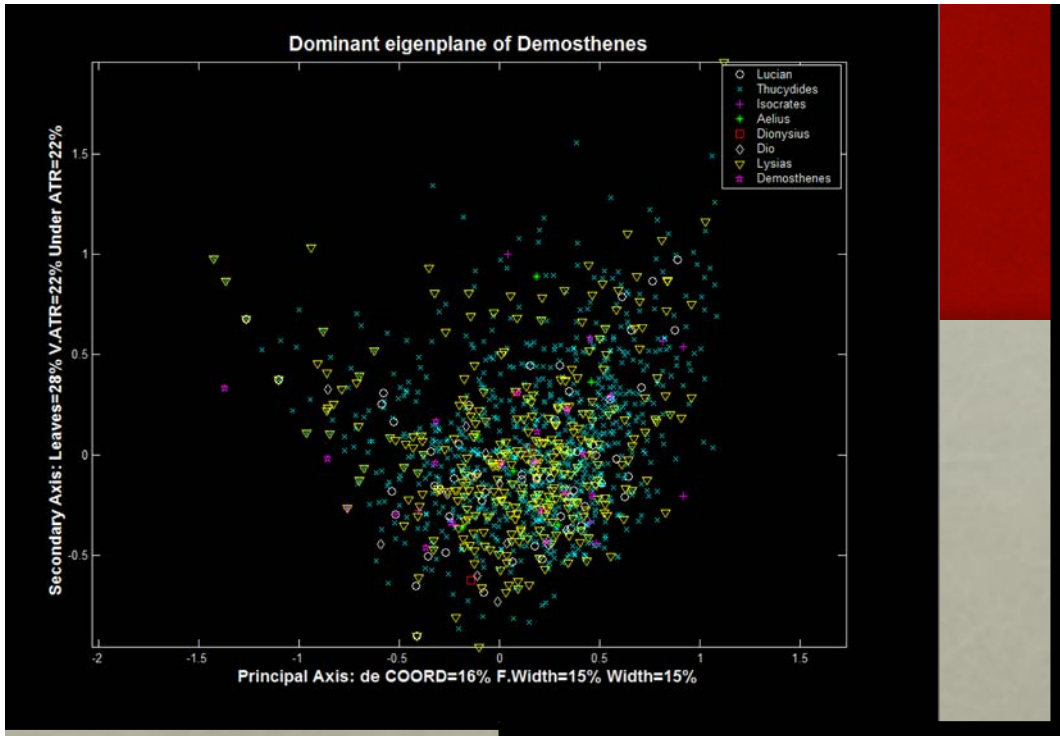

Dominant eigenplane of Lysias
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: ATR=20% Under ATR=19% F.Width=15%
Principal Axis: Width=22% F.Width=22% Under ATR=15%

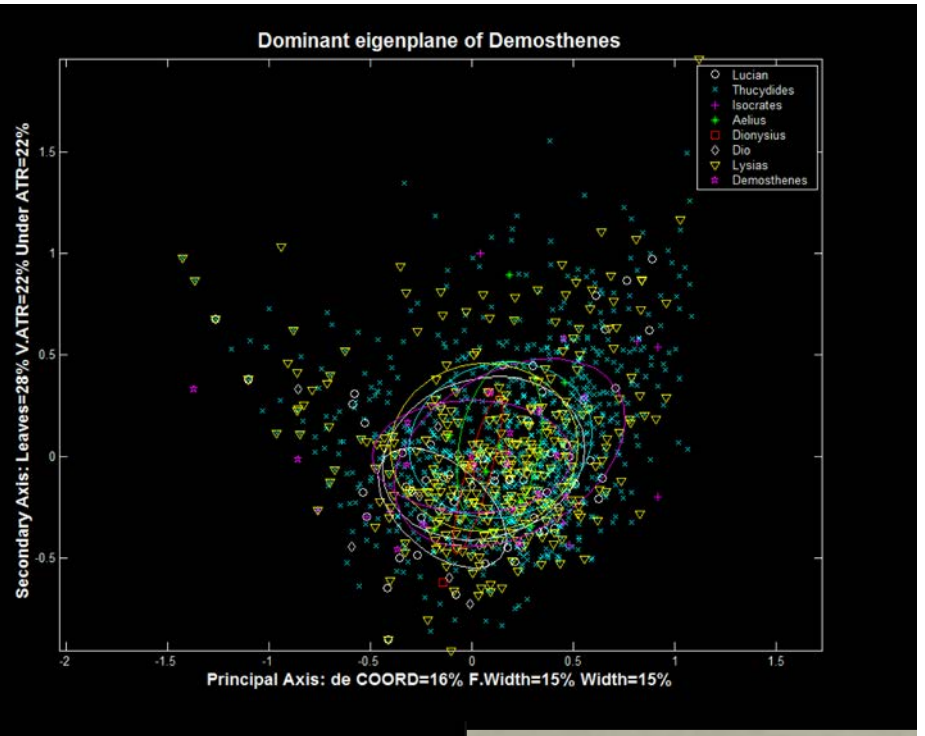

Dominant eigenplane of Lysias
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: ATR=20% Under ATR=19% F.Width=15%
Principal Axis: Width=22% F.Width=22% Under ATR=15%

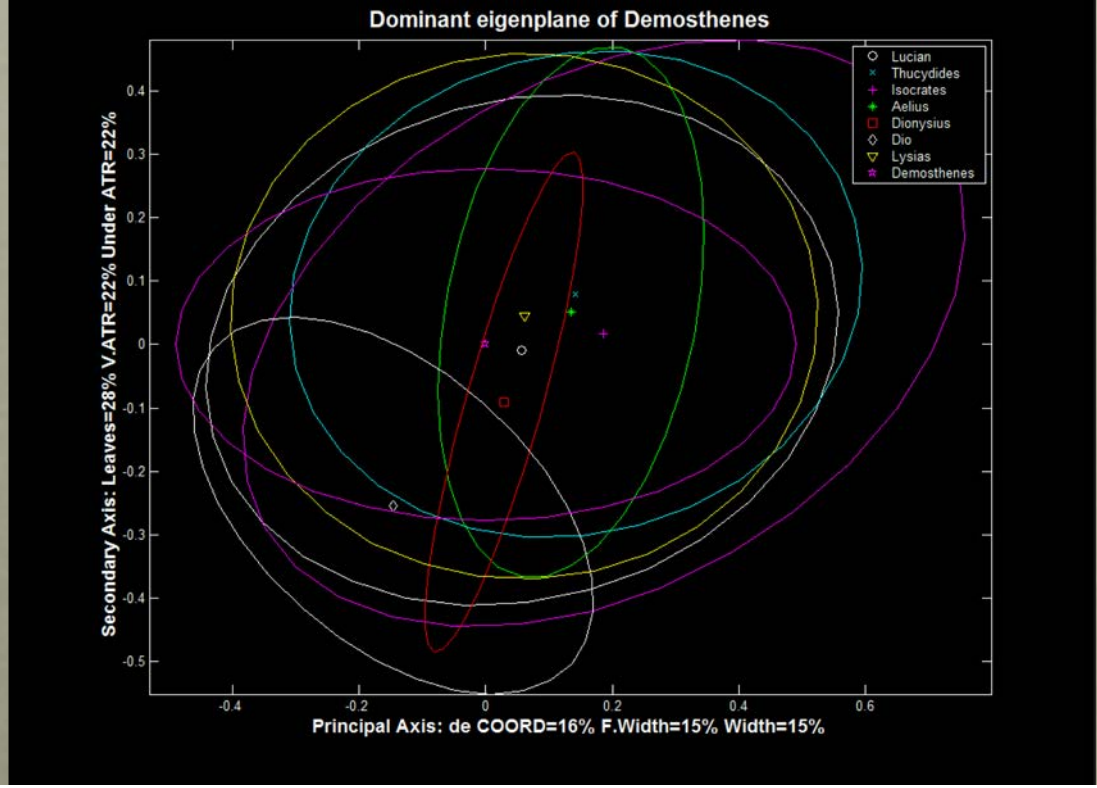

Dominant eigenplane of Isocrates
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: F.Width=26% V.ATR=23% Width=22%
Principal Axis: ATR=23% Under ATR=19% Leaves=16%

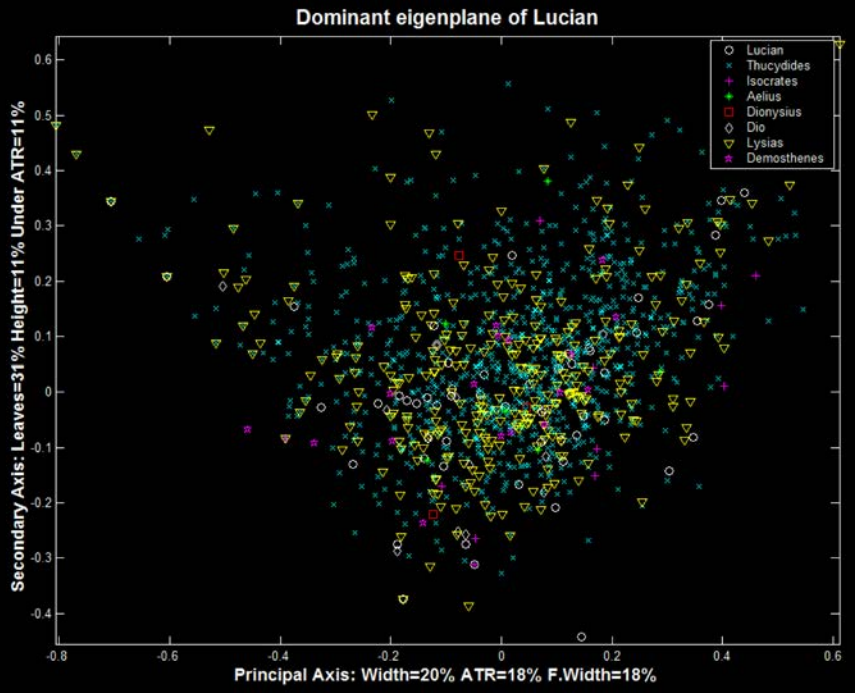

Dominant eigenplane of Isocrates
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: F.Width=26% V.ATR=23% Width=22%
Principal Axis: ATR=23% Under ATR=19% Leaves=16%

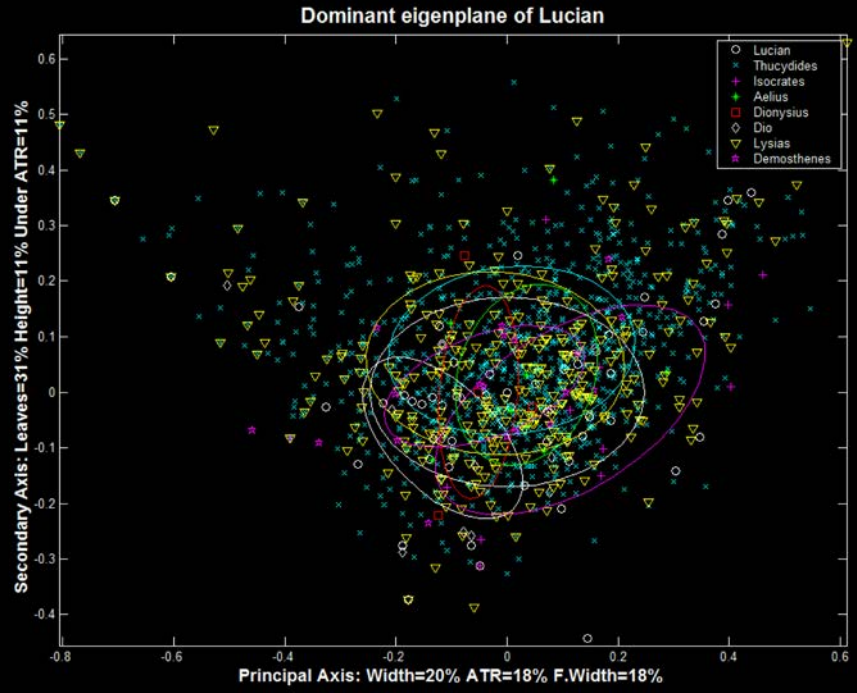

Dominant eigenplane of Isocrates
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: F.Width=26% V.ATR=23% Width=22%
Principal Axis: ATR=23% Under ATR=19% Leaves=16%

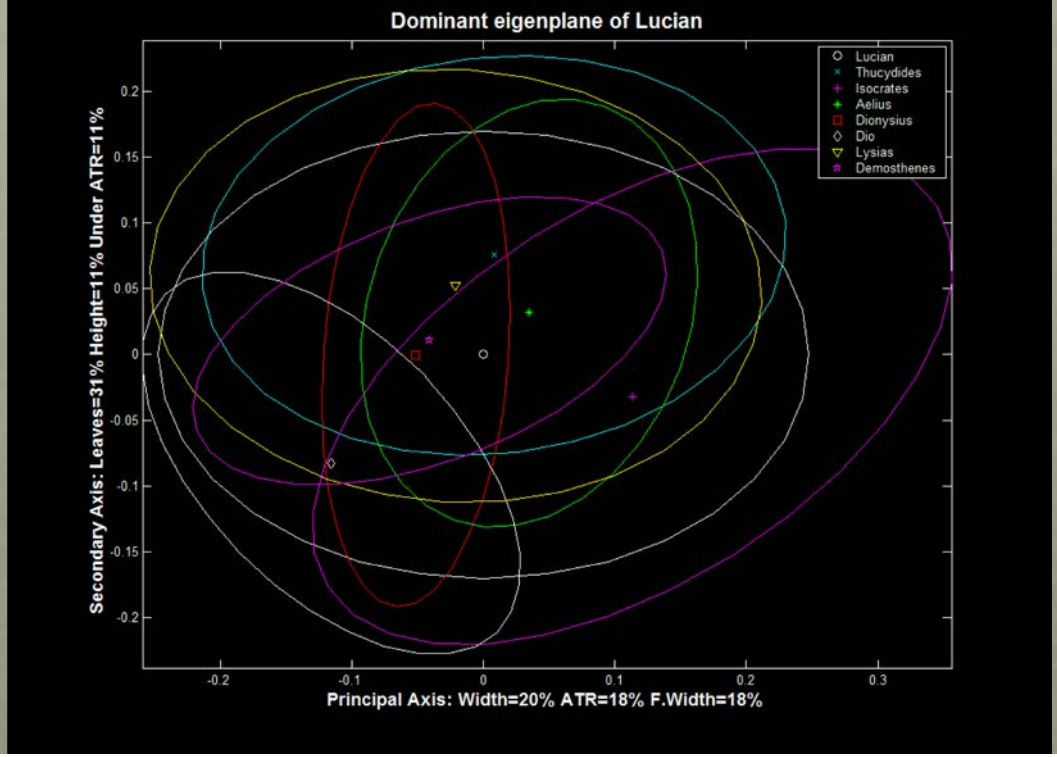

Dominant eigenplane of Demosthenes
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: Leaves=28% V.ATR=22% Under ATR=22%
Principal Axis: de COORD=16% F.Width=15% Width=15%

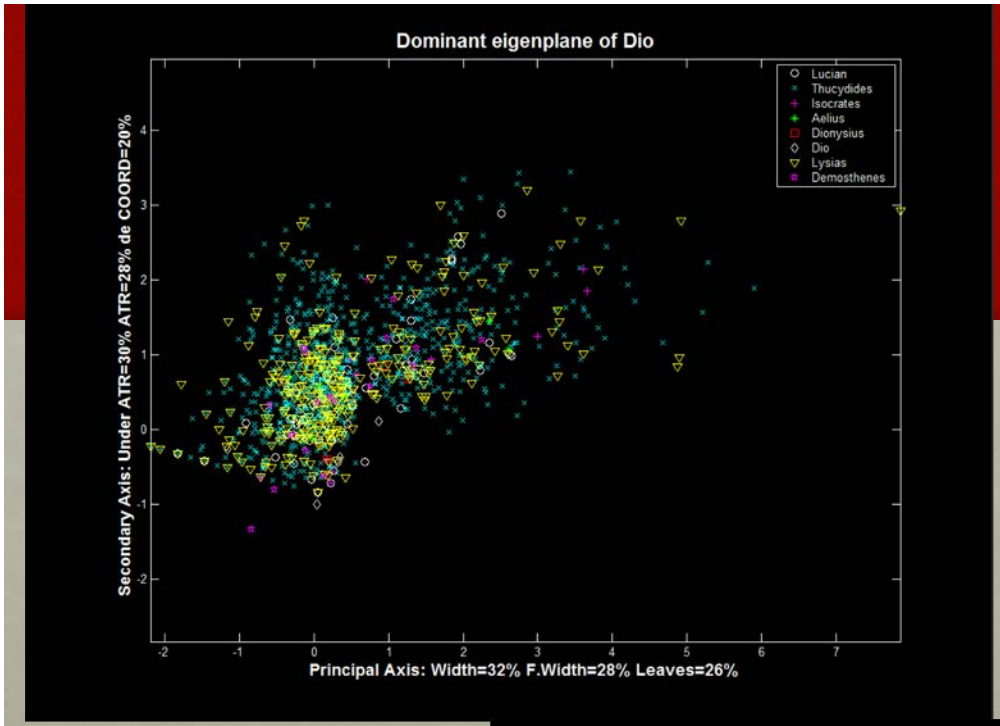

Dominant eigenplane of Demosthenes
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: Leaves=28% V.ATR=22% Under ATR=22%
Principal Axis: de COORD=16% F.Width=15% Width=15%

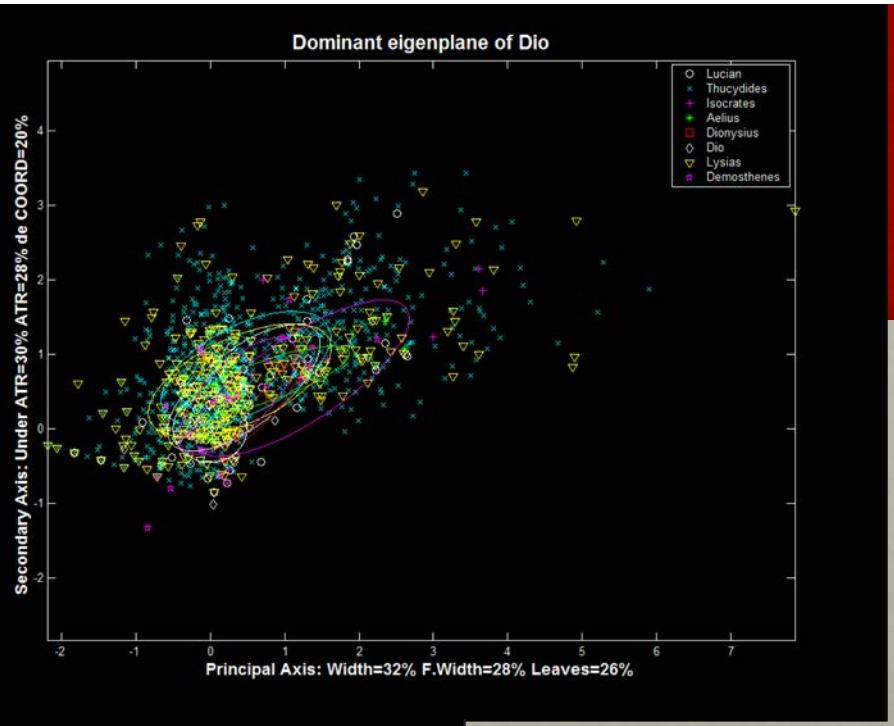

Dominant eigenplane of Demosthenes
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: Leaves=28% V.ATR=22% Under ATR=22%
Principal Axis: de COORD=16% F.Width=15% Width=15%

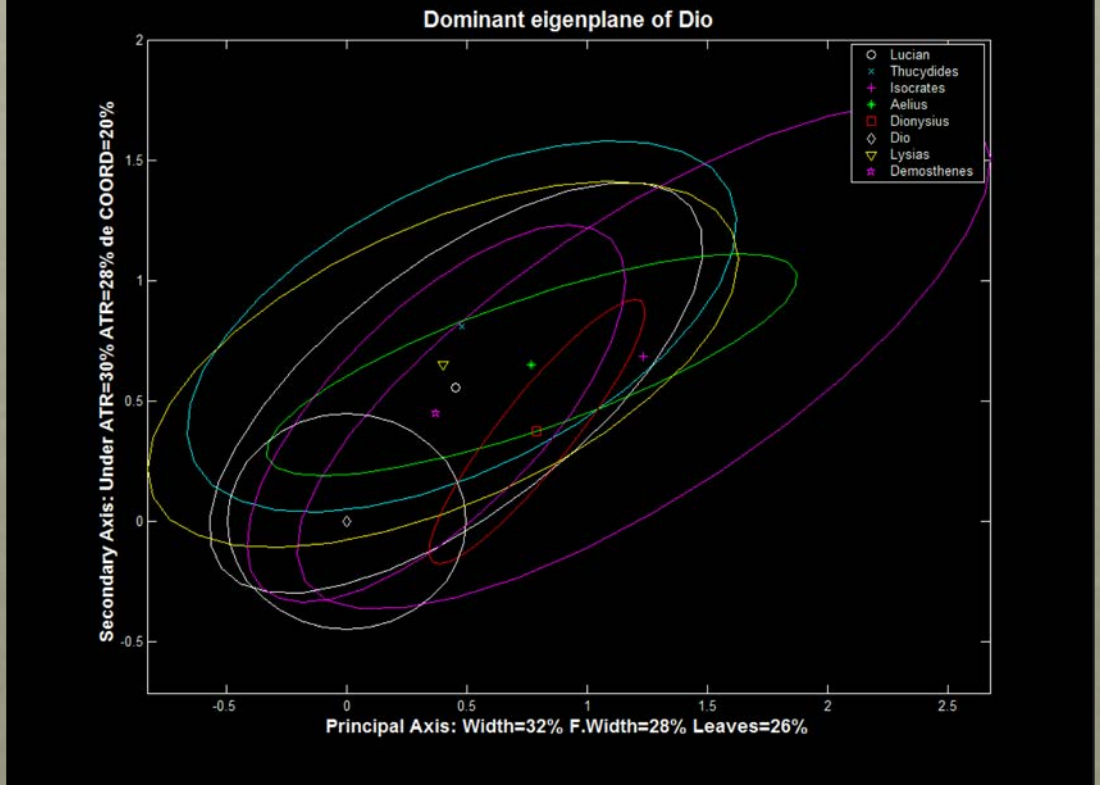

Dominant eigenplane of Lucian
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: Leaves=31% Height=11% Under ATR=11%
Principal Axis: Width=20% ATR=18% F.Width=18%

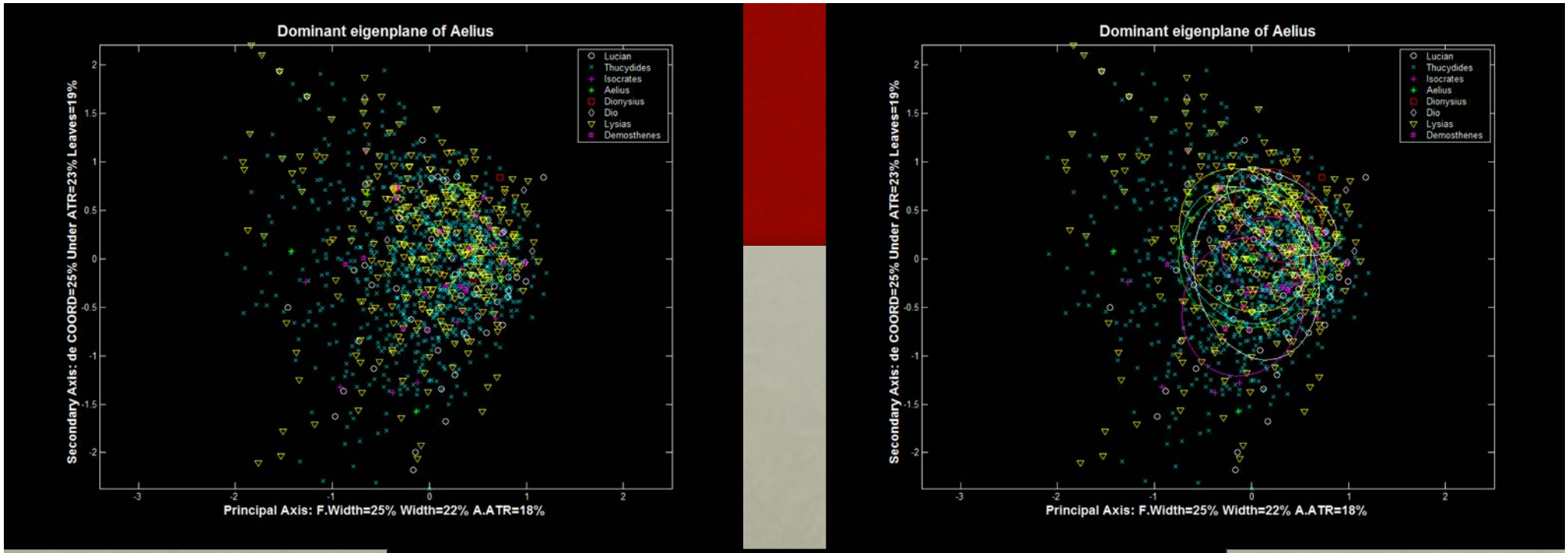

Dominant eigenplane of Lucian
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: Leaves=31% Height=11% Under ATR=11%
Principal Axis: Width=20% ATR=18% F.Width=18%

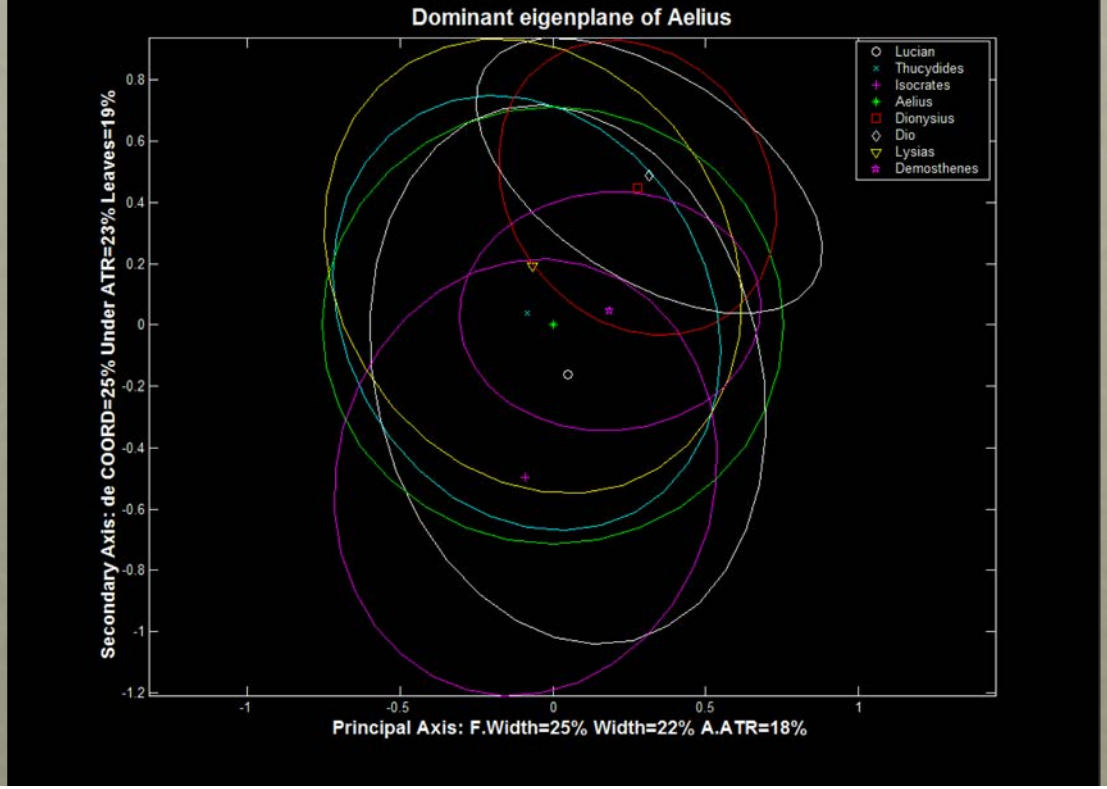

Dominant eigenplane of Lucian
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: Leaves=31% Height=11% Under ATR=11%
Principal Axis: Width=20% ATR=18% F.Width=18%


Dominant eigenplane of Dio
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: Under ATR=30% ATR=28% de COORD=20%
Principal Axis: Width=32% F.Width=28% Leaves=26%


Dominant eigenplane of Dio
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: Under ATR=30% ATR=28% de COORD=20%
Principal Axis: Width=32% F.Width=28% Leaves=26%


Dominant eigenplane of Dio
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes
Secondary Axis: Under ATR=30% ATR=28% de COORD=20%
Principal Axis: Width=32% F.Width=28% Leaves=26%


Dominant eigenplane of Aelius
Secondary Axis: de COORD=25% Under ATR=23% Leaves=19%
Principal Axis: F.Width=25% Width=22% A.ATR=18%
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes


Dominant eigenplane of Aelius
Secondary Axis: de COORD=25% Under ATR=23% Leaves=19%
Principal Axis: F.Width=25% Width=22% A.ATR=18%
Lucian
Thucydides
Isocrates
Aelius
Dionysius
Dio
Lysias
Demosthenes

STYLOMETRIC ANALYSIS

- Lorenzo da Valla in 1439

The Donation of Constantine (Latin: Donatio Constantini) is a forged Roman imperial decree by which the 4th century emperor Constantine the Great supposedly transferred authority over Rome and the western part of the Roman Empire to the Pope. Composed probably in the 8th century, it was used, especially in the 13th century, in support of claims of political authority by the papacy.

The basics of stylometry were set out by Polish philosopher Wincenty Lutos□awski in Principes de stylométrie (1890)

CASE STUDIES

- The Style of Numbers behind a Number of Styles
- Making Hit Music into Science
- Forensic Linguistics
- Forensic Analysis of Instant Messaging
- Deception in Instant Messaging
- Authorship of Ronald Reagan's Radio Addresses
- "Double Falsehood"

STYLO

- Writer Invariant

Property of a text that is invariant of its authors

Word Lengths

Sentence Length

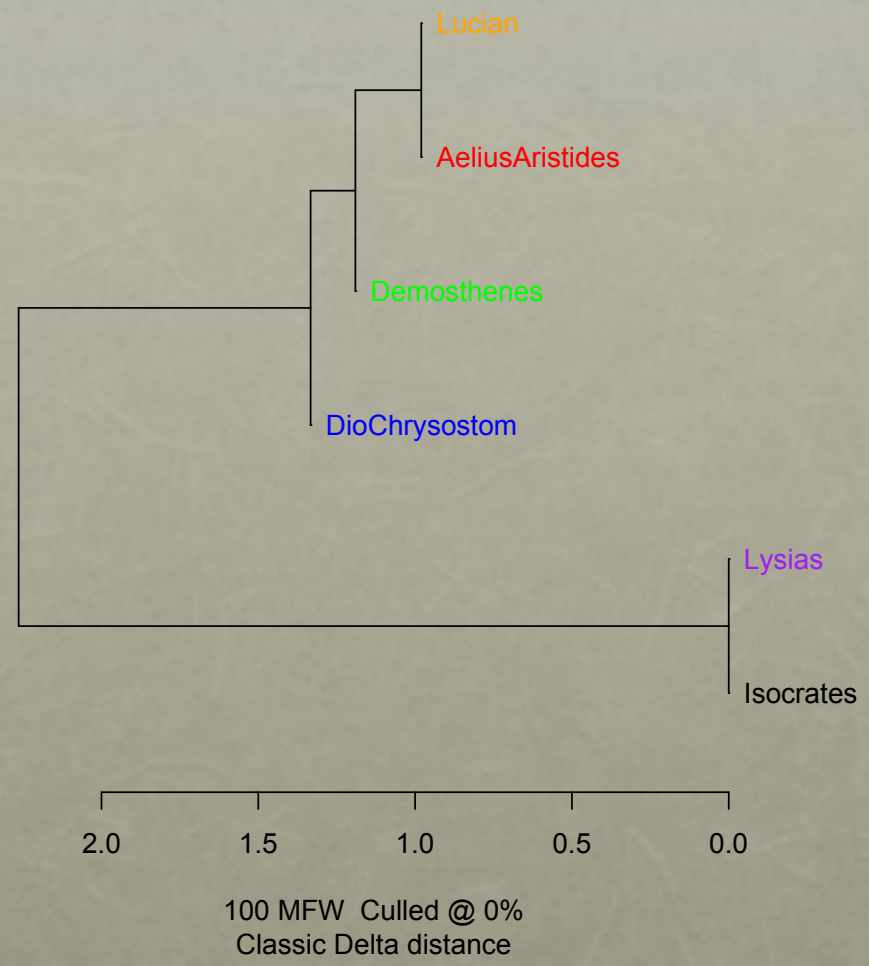
Average Word Length

Noun, Verb or adverb usage frequency

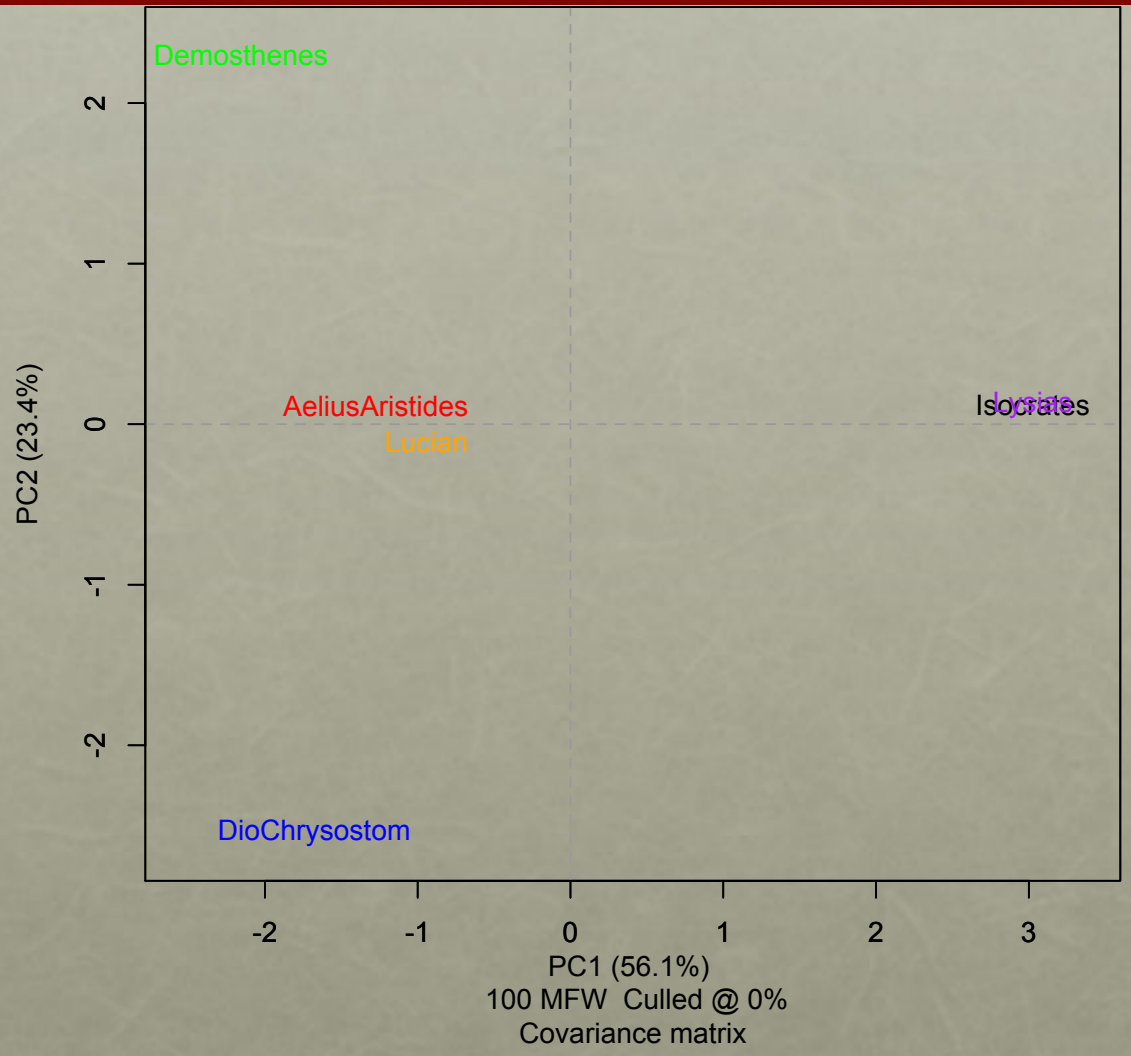
Vocabulary Richness

Frequency of Function Words

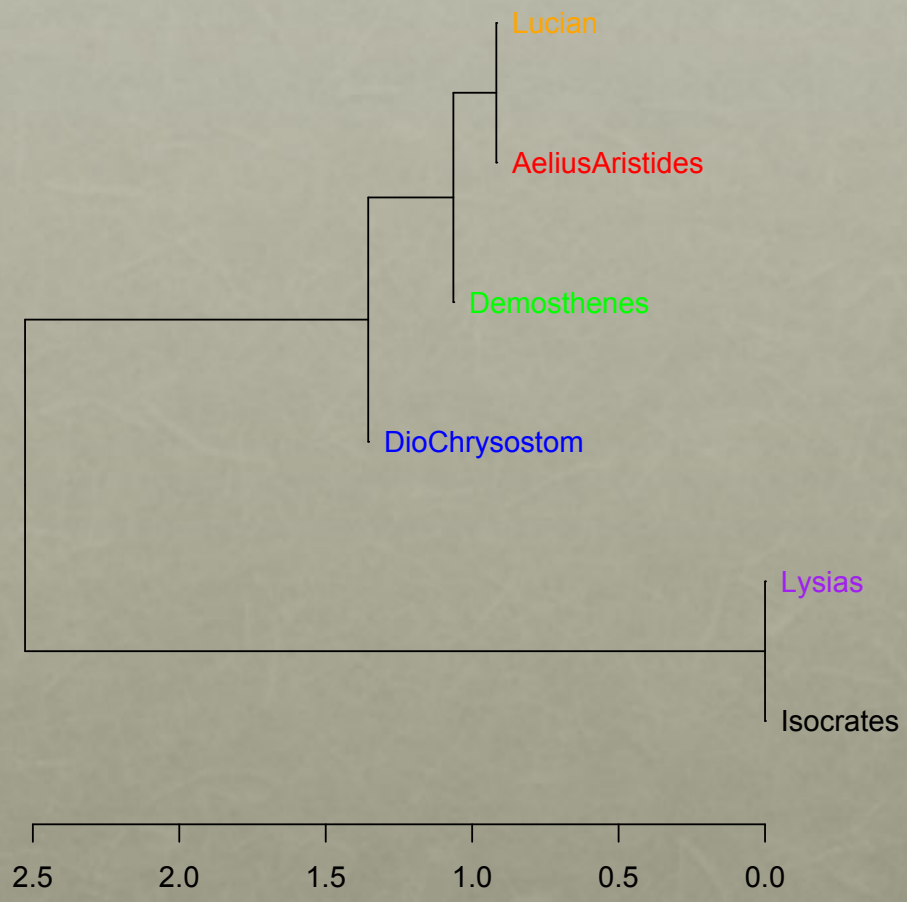
Desktop
Cluster Analysis



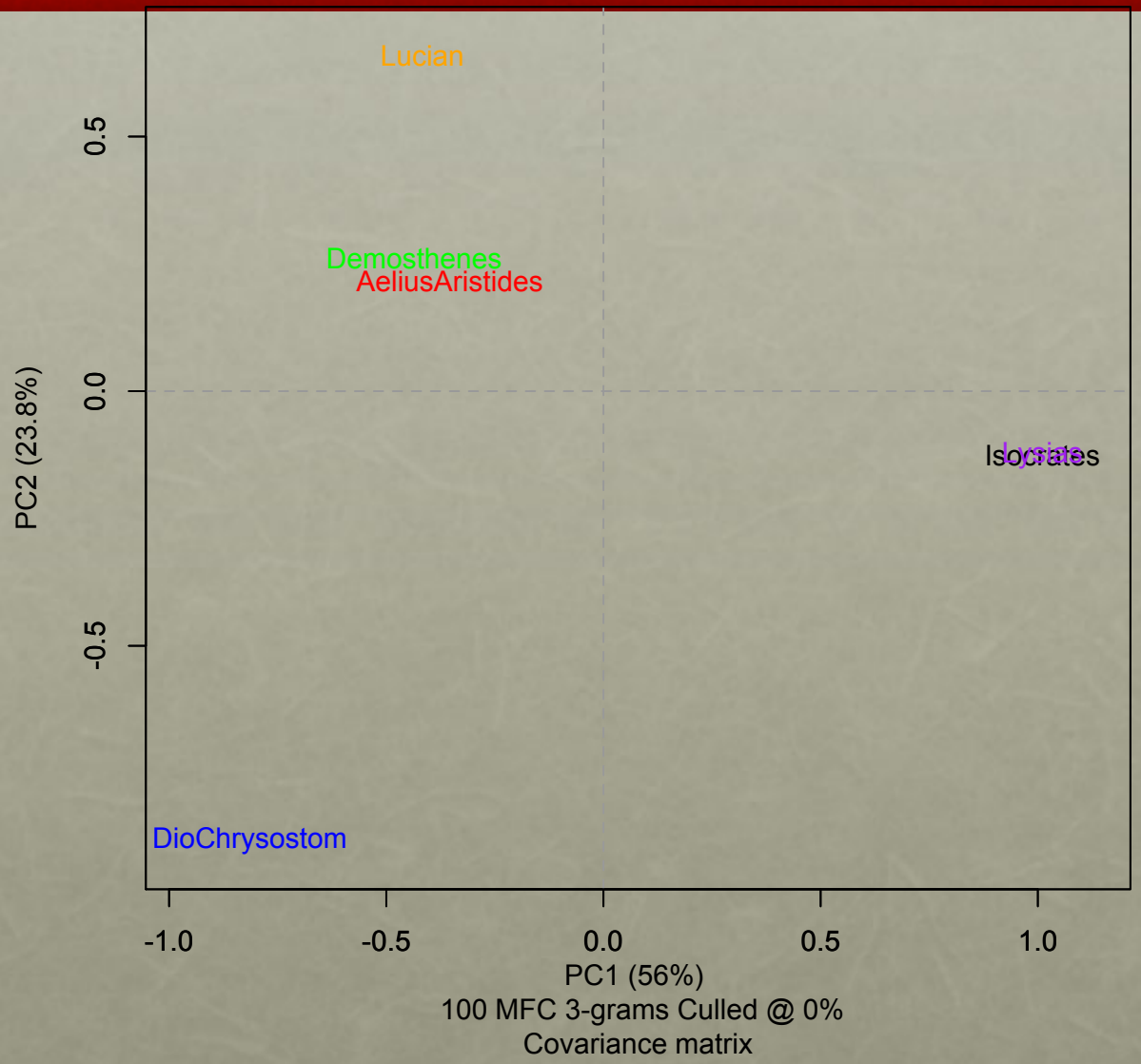
Desktop
Principal Components Analysis



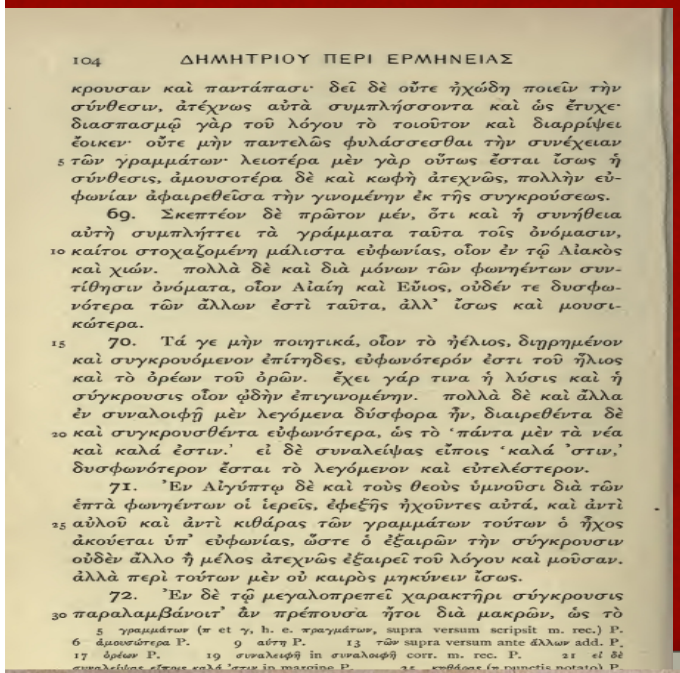
Desktop
Cluster Analysis



Desktop
Principal Components Analysis



THANK YOU


104 ΔΗΜΗΤΡΙΟΥ ΠΕΡΙ ΕΡΜΗΝΕΙΑΣ

κρουσαν καὶ παντάπασι· δεῖ δὲ οὔτε ἠχώδη ποιεῖν τὴν σύνθεσιν, ἀτέχνως αὐτὰ συμπλήσσοντα καὶ ὡς ἔτυχε· διασπασμῷ γὰρ τοῦ λόγου τὸ τοιοῦτον καὶ διαρρίψει ἔοικεν· οὔτε μὴν παντελῶς φυλάσσεσθαι τὴν συνέχειαν τῶν γραμμάτων· λειοτέρα μὲν γὰρ οὕτως ἔσται ἴσως ἡ σύνθεσις, ἀμουσοτέρα δὲ καὶ κωφὴ ἀτεχνῶς, πολλὴν εὐφωνίαν ἀφαιρεθεῖσα τὴν γνομένην ἐκ τῆς συγκρούσεως.

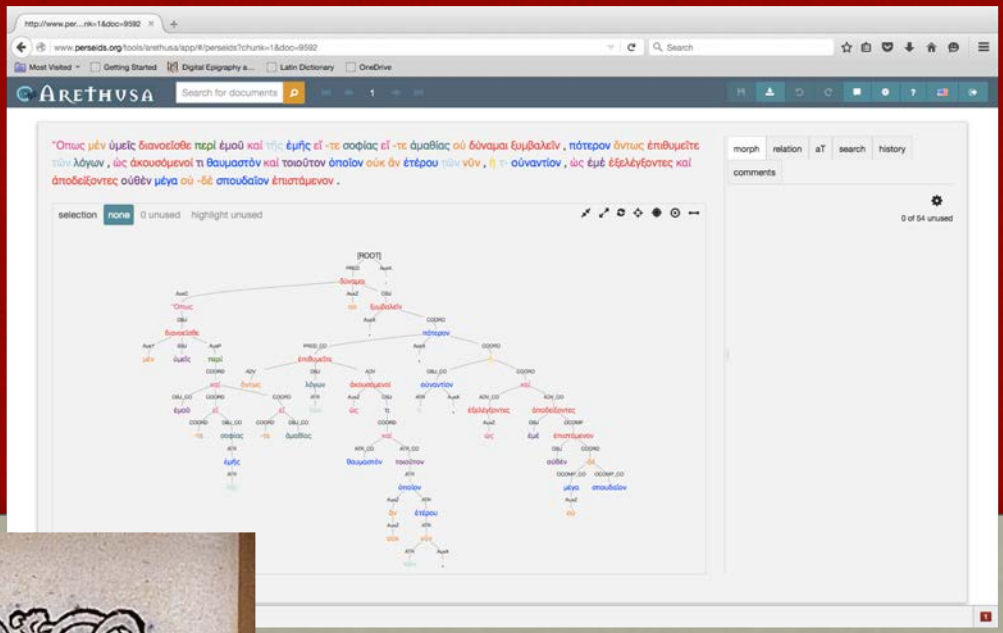
69. Σκεπτέον δὲ πρῶτον μέν, ὅτι καὶ ἡ συνήθεια αὐτὴ συμπλήττει τὰ γράμματα ταῦτα τοῖς ὀνόμασιν, καίτοι στοχαζομένη μάλιστα εὐφωνίας, οἷον ἐν τῷ Αἰακὸς καὶ χιών. πολλὰ δὲ καὶ διὰ μόνων τῶν φωνηέντων συντίθησιν ὀνόματα, οἷον Αἰαίη καὶ Εὔιος, οὐδέν τε δυσφωνότερα τῶν ἄλλων ἐστὶ ταῦτα, ἀλλ' ἴσως καὶ μουσικώτερα.

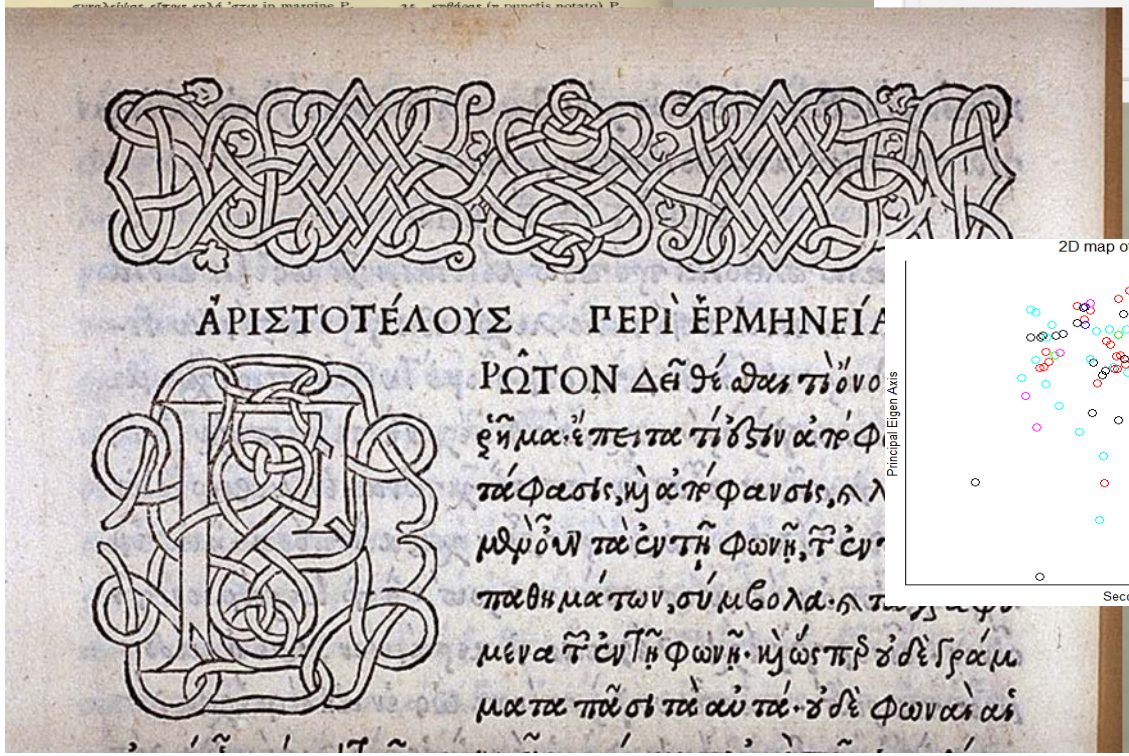
70. Τά γε μὴν ποιητικά, οἷον τὸ ἠέλιος, διῃρημένον καὶ συγκρουόμενον ἐπίτηδες, εὐφωνότερόν ἐστι τοῦ ἥλιος καὶ τὸ ὀρέων τοῦ ὀρῶν. ἔχει γάρ τινα ἡ λύσις καὶ ἡ σύγκρουσις οἷον ᾠδὴν ἐπιγινομένην. πολλὰ δὲ καὶ ἄλλα ἐν συναλοιφῇ μὲν λεγόμενα δύσφορα ἦν, διαιρεθέντα δὲ καὶ συγκρουσθέντα εὐφωνότερα, ὡς τὸ 'πάντα μὲν τὰ νέα καὶ καλά ἐστιν.' εἰ δὲ συναλείψας εἴποις 'καλά 'στιν,' δυσφωνότερον ἔσται τὸ λεγόμενον καὶ εὐτελέστερον.

71. Ἐν Αἰγύπτῳ δὲ καὶ τοὺς θεοὺς ὑμνοῦσι διὰ τῶν ἑπτὰ φωνηέντων οἱ ἱερεῖς, ἐφεξῆς ἠχοῦντες αὐτά, καὶ ἀντὶ αὐλοῦ καὶ ἀντὶ κιθάρας τῶν γραμμάτων τούτων ὁ ἦχος ἀκούεται ὑπ' εὐφωνίας, ὥστε ὁ ἐξαιρῶν τὴν σύγκρουσιν οὐδὲν ἄλλο ἢ μέλος ἀτεχνῶς ἐξαιρεῖ τοῦ λόγου καὶ μοῦσαν. ἀλλὰ περὶ τούτων μὲν οὐ καιρὸς μηκύνειν ἴσως.

72. Ἐν δὲ τῷ μεγαλοπρεπεῖ χαρακτῆρι σύγκρουσις παραλαμβάνοιτ' ἂν πρέπουσα ἤτοι διὰ μακρῶν, ὡς τὸ

5 γραμμάτων (π et γ, h. e. γραμμάτων, supra versum scripsit m. rec.) P. 6 ἀμουσότερα P. 9 αὐτὴ P. 13 τῶν supra versum ante ἄλλων add. P. 17 ἀρέων P. 19 συναλειφθῇ in συναλοιφῇ corr. m. rec. P. 21 εἰ δὲ συναλείψας εἴποις καλά 'στιν in margine P. 25 κεφάλαιος (π punctis notato) P.




ΑΡΙΣΤΟΤΕΛΟΥΣ ΠΕΡΙ ΕΡΜΗΝΕΙΑ

ΡΩΤΟΝ Δεῖ θέσθαι τὸνο