

# A Digital Analysis of Tacitus' Annals Using Voyant Tools

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**Abstract:** *This study uses Voyant tools to conduct a digital textual analysis of Tacitus' Annals, combining computational methods with traditional close reading to examine Tacitus' starkly contrasting portrayals of Tiberius and Nero. The analysis focuses on patterns in moral and political vocabulary, utilizing frequency trend charts, word clouds, and keyword context visualizations to reveal how Tacitus employs evaluative language within his narrative. The findings align with existing scholarship: Tiberius is portrayed as restrained and ambivalent, while Nero receives increasingly harsh criticism. Simultaneously, digital evidence uncovers subtle shifts imperceptible through close reading alone—such as the gradual diminishment of moral praise in later accounts of Tiberius and occasional echoes of republican ideals within Nero's biography. These findings demonstrate how digital tools can complement traditional philological methods, deepening our understanding of Tacitus' rhetorical strategies while offering fresh perspectives for broader discussions in Roman historiography and digital classics.*

**Keywords:** *Voyant Tools; Lexical Analysis; Tacitus; Annals; Roman Historiography*

## 1. Introduction

Tacitus' Annals provide a detailed and highly personal and critical account of the history of the early Roman Empire. His depictions of emperors such as Tiberius and Nero have long fascinated historians for their complexity and moral overtones. Tacitus's narrative is not moderately formal, but is full of rhetorical nuances—subtle ironies, suggestive omissions, and strategic word choice. Scholars have traditionally read these elements through close readings, emphasising Tacitus's patriarchal perspective and his scepticism towards authoritarian rule.

In recent years, however, the rise of the digital classics has introduced new methods for analysing ancient texts. Through the use of computational tools, scholars can now explore lexical patterns, visualise word usage, and study rhetorical structures on a much larger scale. One such tool is Voyant Tools, a free browser-based platform that facilitates textual analysis through visualisation and keyword statistics. It allows even beginning Latin students to engage with Latin texts in innovative ways that complement traditional linguistic approaches.

This paper combines traditional literary analysis with digital methods to explore how Tacitus characterises Tiberius and Nero in the Annals. Specifically, the paper examines the use of the terms *virtus* (virtue) and *potestas* (power) to assess whether Tacitus subtly expresses different moral judgements through lexical emphasis.

## 2. Literature Review

The scholarly tradition of interpreting Tacitus has traditionally relied upon close reading, focusing on his concise style, profound irony, and veiled moral commentary. Within classical studies, particularly in the work of Ronald Syme, emphasis has been placed on Tacitus's sophisticated rhetorical strategies and his complex portrayals of imperial figures. Salmann noted that Tiberius's portrayal exhibits contradictory traits: initially restrained and moderate, later obscure and enigmatic; whereas Nero is depicted as an overtly condemned figure, his narrative saturated with explicit moral labelling and vivid detail. Subsequent scholarship, building upon Seymour's insights, has expanded the scope of analysis by examining Tacitus' narrative techniques, historical criticism, and political stance. Nevertheless, the fundamental contrast between the two emperors established within Roman historiography remains

widely acknowledged.

In recent decades, the rise of digital humanities has opened entirely new avenues for the study of classical texts. Digital classics integrates computational tools with philological methods, enabling scholars to trace lexical patterns, visualise thematic trends, and explore structural features that remain elusive to traditional approaches. Whilst these methods cannot replace conventional textual criticism, they provide robust support for hypothesis testing, pattern recognition, and large-scale corpus analysis. Tools such as stylometrics, text mining, and visualisation platforms have significantly enriched the study of Greek and Latin literature. Nevertheless, the application of digital technologies in the study of specific classical authors remains uneven. Many canonical works—including Tacitus's *Annals*—despite their rich analytical potential, have yet to receive sustained quantitative investigation.

Voyant Tools has become a widely favoured text analysis platform within the humanities, enabling researchers to examine lexical distributions, collocation networks, and key word contexts through visualisation and statistical methods. Although the tool has been applied to diverse studies ranging from Latin poetry to medieval and modern texts, its utilisation within the field of Roman historiography remains limited. The unique challenges of Latin (such as its complex morphology) may hinder precise quantitative interpretation—particularly when morphological reconstruction is absent—yet the visualisations generated by Voyant still offer valuable insights into rhetorical patterns. The scarcity of digital research on Tacitus highlights a significant gap: few studies systematically explore how quantitative evidence corroborates or revises traditional scholarly interpretations of his portrayal of imperial figures. This study addresses this gap by applying Voyant tools to the *Annals*, demonstrating how digital analysis can reveal Tacitus' evaluative vocabulary. This provides a data-driven perspective that complements and deepens existing philological interpretations.

### 3. Digital Classics and Voyant Tools

Since the development of computer technology, the field of digital classics has emerged as the intersection of traditional classical studies and computational methods. By incorporating modern computer technology techniques and using the power of modern computers as an aid, scholars can expand the scope of research that was once limited to labour-intensive close reading. Digital Classics is not intended to replace classical linguistics, but rather to augment it by enabling researchers to discover broad patterns across the corpus, conduct quantitative hypothesis experiments, and present findings in a visual format for easy interpretation [3]. For undergraduates and beginning scholars, digital methods lower the barrier to entry: instead of rote memorisation of every turn or mastery of complex editorial conventions, learners can start by uploading texts to a user-friendly platform and exploring lexical distributions, thematic clusters or stylistic features.

A useful suite of text analysis tools is Voyant Tools, a free browser-based application. Developed by Stéfan Sinclair and Geoffrey Rockwell, Voyant requires no installation or programming knowledge. Users simply paste or upload a plain text corpus and then interact with a series of interconnected widgets: word frequency lists, dynamic trend maps, word clouds, collocation tables and consistent displays. Each tool serves a different purpose.

Applying Voyant to Latin texts (such as Tacitus' *Annals*) presents some challenges - Latin is highly transitive, so thesaurus-level analysis requires either manual lemmatisation or careful tag grouping. However, even without lemmatisation, Voyant's tools can produce meaningful insights. For example, visualising *virtus* alongside *crudelitas* in the 16 writings of Tacitus immediately reveals shifts in moral emphasis: a clear concentration of *virtus* in the early writings and a surge of *crudelitas* in Nero's narrative. Similarly, trend maps can help determine whether *potestas* (power) is invoked more frequently in discussions of institutional authority (senatorial decrees, legal enactments) or individual power (imperial decrees, coercive measures).

In addition to raw frequency, Voyant also helps with collocation analysis, highlighting words that occur frequently near the target word. In the context of *potestas*, we can observe recurrent collocations, such as *senatus* or *auctoritas*, in passages about Tiberius, suggesting an ideological link between imperial power and the republican system. In contrast, the frequent occurrence of *potestas* with violent verbs in later books highlights Nero's authoritarian excesses. By exporting this data-graphs, tables, and cross-references—students can incorporate visual evidence directly into their writing, using specific numerical pieces to support interpretive claims.

Most importantly, Voyant Tools enables researchers to take a 'data-informed' stance. Hypotheses

generated through close reading (e.g., 'Tacitus is more ambivalent in his portrayal of Tiberius than he is of Nero') can be tested quantitatively: do the trend lines confirm a higher density of moral vocabulary in Nero's book? Do word cloud comparisons reflect a shift from civic to sinful vocabulary? While Voyant cannot parse irony or detect rhetorical undercurrents on its own, it provides a rigorous starting point for directed research. Combined with traditional linguistics-detailed parsing of syntax, consideration of historical context, and sensitivity to rhetorical devices-Voyant's visualisation technology becomes a powerful complement, expanding the pedagogical practice and scholarly analysis of the digital classics.

#### 4. Traditional Scholarship on Tacitus' Depictions of Tiberius and Nero

The choice of the text of Publius Cornelius Tacitus for analysis lies in the unique place that the man and his writings occupy in Roman historiography. As a senator and member of the equestrian class, he had an intimate knowledge of the imperial system and senatorial politics. His *Annals*, covering the reigns of Tiberius, Caligula, Claudius, and the early years of Nero, blends empirical reporting with moral commentary. Tacitus's narrative style is characterised by brevity, periodic sentences and multiple levels of irony, which allowed him to imply judgement without overt editorialising. Composed during the reigns of Trajan and Hadrian, the *Annals* reflect both nostalgic republican sentiment and a critical sense of public power. For centuries, historians and literary critics have relied on close readings of this informative and allusive text to reconstruct Tacitus' political philosophy and moral stance.

Tacitus' portrayal of Tiberius and Nero has been a benchmark in scholarly debates about imperial virtue and tyranny. In the *Annals*, Tiberius (14-37 AD) is a character with a dual personality. Initially, Tacitus recounts his restraint and co-operation with the Senate in the early years of his reign, describing his unwillingness to accept total power and his respect for the Senate's prerogatives. However, after the suspicious death of Germanicus (c. AD 19) and the conspiracy of Sejanus (c. AD 31), the image of Tiberius becomes shadowy, transformed into a man of secrecy, judicial terror, and moral scepticism. Tacitus never fully condemns him in a single decisive passage; instead, he scatters ominous details-unexpected executions, whispered rumours, and oppressive informers-allowing the reader to piece together a portrait of the anxiety of the senate under a masked despot.

By contrast, the description of Nero (A.D. 54-68) in the *Annals* is less ambiguous. The early part of the *Annals* records his education under Seneca and Bruce, as well as his initially cautious and popular reforms. However, Tacitus devotes a great deal of space to Nero's descent into extravagance, persecution, and violence: the matricide in Book XIV; the fires and scapegoating of Christians in Book XV; and the horrific stories of mad spectacles and arbitrary brutality. The rhetorical intensity of Tacitus's phrasing-frequent invective, dramatic juxtaposition, and vivid detail-highlights the narrative of moral collapse. As a result, Nero became the quintessential 'bad emperor' of historiography, his name synonymous with tyranny and decadence.

In Ronald Syme's analysis, we see the traditional scholarly understanding of what we have come to expect from Tacitus in his contribution to the field of imperial historiography. Syme portrays Tacitus as a 'republican at heart', whose writings, although surviving only from the imperial period, retained the implicit ideals of senatorial governance.[1] Syme's analysis of Tacitus is a good example of how Tacitus was a 'republican at heart', and of how his writings, although surviving only from the imperial period, retained implicit ideals of senatorial governance.[2] According to Syme, Tacitus' portrayal of Tiberius is "ambivalent" - he recognises the second emperor's managerial abilities and occasional moderation, while also recording his excesses. According to Sem, Tacitus's rhetorical strategy towards Tiberius is characterised by understatement: moral judgement is embedded in succinct observation rather than overt invective. In this reading, the historian's subtle sarcasm casts long shadows, enabling the reader to see Tiberius's shortcomings under a veneer of official respect.

In contrast, Syme sees Tacitus' portrayal of Nero as "unambiguously condemnatory".[2] He highlights the contrast between Tacitus' whispered criticism of Tiberius and his loud condemnation of Nero's crimes.[2] In Syme's view, the latter moral image is constructed through lengthy narrative sequences, detailed exemplifications and explicit moral labelling (e.g. *crudelitas*, *luxuria*). Syme also emphasises Tacitus's attribution of collective guilt - Nero's court, freemen and soldiers all participate in the emperor's disgrace - thus reinforcing the moral thrust of the narrative.

Setting the tone for mid-twentieth-century Tacitus studies, Syme's interpretation emphasised the twin modes of moral history: a 'competent' treatment of the early principate and an uncompromising exposé of its decadence. Subsequent scholarship has nuanced Syme's argument-questioning the

reliability of Tacitus's sources, exploring his narrative techniques, and considering broader rhetorical traditions-but his central point remains influential: Tacitus treats the emperors with varying degrees of moral commitment, and this variation reflects the historian's own political commitments and stylistic choices.

### 5. Digital Analysis and Comparative Interpretation to the Tradition

To digitally explore Tacitus' Annals, we selected several key Latin terms related to imperial governance and moral judgement: potestas (power), virtus (virtue), imperium (authority), crudelitas (cruelty), libertas (freedom) and auctoritas (influence). We then applied three main features of Voyant: trend (plotting the frequency of occurrence of terms in different books), word cloud (visualising overall salience) and context (examining the immediate linguistic context of each token).

According to the results of the data tool, virtus peaks in Books I-III, which summarise the early years of Tiberius' reign, and then gradually declines, appearing very rarely in the Nero-period narratives (As shown in figure 1). On the other hand, words with negative connotations such as crudelitas and luxuria appear rarely in the first few books, before a sharp rise in books XIV-XV (as shown in figure 2), reflecting a shift in the perspective and content of Tacitus's narratives in the Nero period. Potestas maintains a modest, steady presence, but surges in the events of the succession (I.12 on Tiberius's accession; XIV.1 on the consolidation of Nero) (as shown in figure 3).

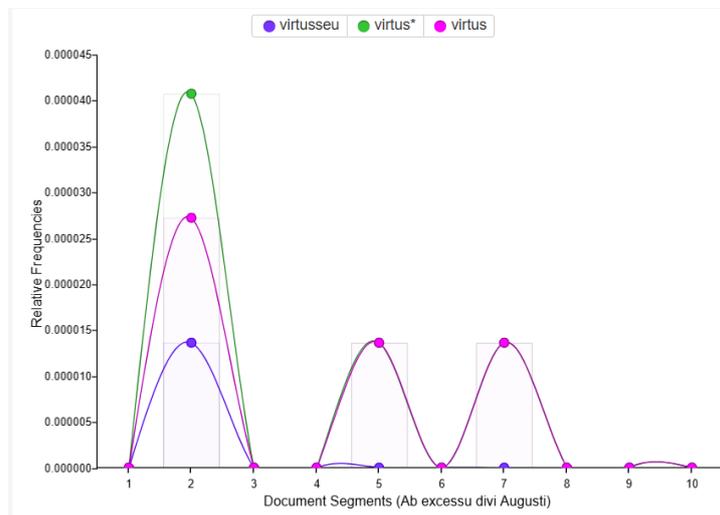


Figure 1. Trend analysis of virtus across the segmented books of Tacitus' Annals.

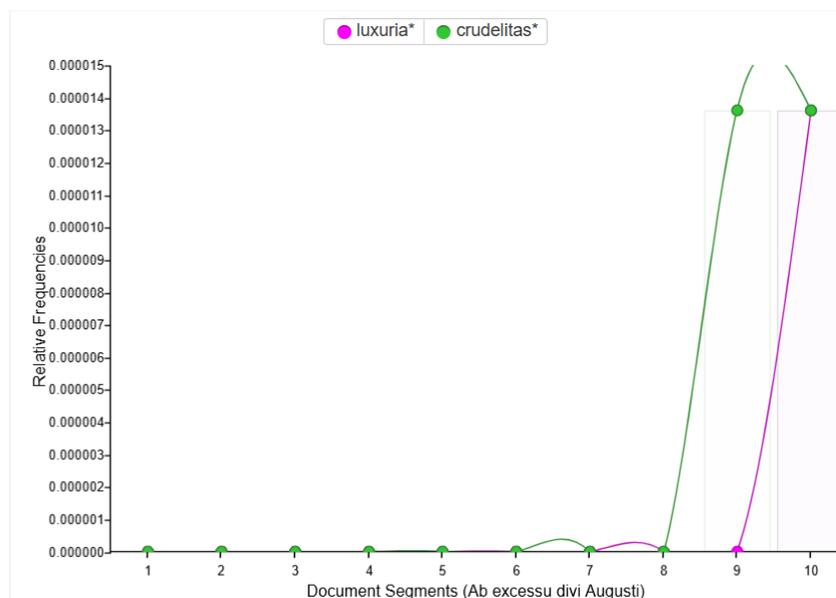


Figure 2. Frequency trends of luxuria and crudelitas in the later books of the Annals.

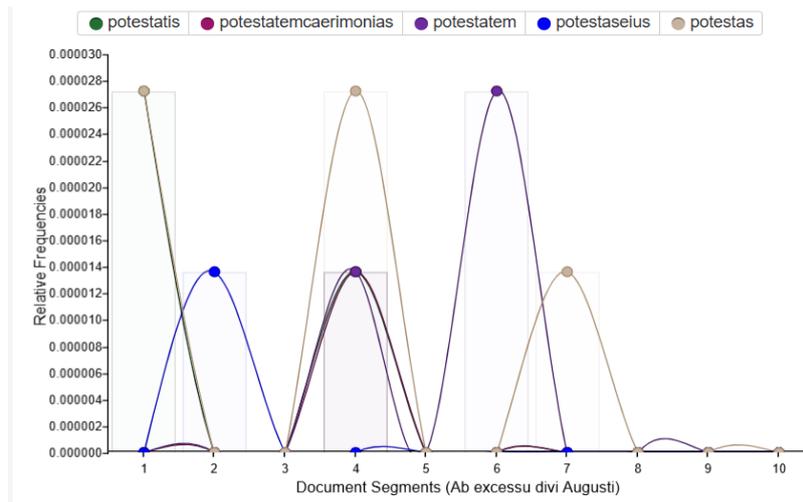


Figure 3. Distribution of potestas and related forms across the segmented books of the Annals.

These quantitative patterns go a long way towards confirming Sem's thesis: Tacitus's portrayal of Tiberius is relatively balanced, with a sustained emphasis on *virtus* and institutional language (e.g. *auctoritas*, *imperium*), while the reign of Nero intensifies references to *crudelitas* and *luxuria*. However, Voyant also detects some subtleties: in Tiberius's narrative, '*auctoritas*' occasionally overtakes '*potestas*,' suggesting that Tacitus values moral authority over raw power. Moreover, the relative continuity of the two emperors' dominions complicates any binary moral reading, suggesting a continuing concern with formal structure.

At the same time, however, through the analysis of Voyant tools, a perspective that has gone unnoticed in the past can be seen, revealing several nuances from the traditional reading. Firstly, in the passage on Tiberius, the word *auctoritas* (moral influence) actually outweighs *potestas* (legal authority), as shown in figure 4, suggesting that Tacitus values the emperor's prestige and public standing more than his formal authority - a nuance that is often glossed over in close readings. Second, while it is normal to emphasise the continuity of *virtus* during the reign of Tiberius in the tradition generally, the numerical trend line shows a marked decline in the frequency of the word in the later part of Tiberius' reign, suggesting that the moral veneer of this traditionally viewed as a wise emperor was being eroded at a faster rate than previously assumed. Finally, while Tacitus' narrative of Nero is known for being full of negative terminology such as "*crudelitas*" and "*luxuria*", our control data also reveals surprising occurrences of *libertas* (liberty) and *auctoritas* in the same episode as Nero's - suggesting that from time to time Tacitus invokes Republican values to satirise the excesses of imperial behaviour. Together, these patterns suggest that numerical methods can both confirm and complicate established interpretations, revealing the hierarchical nature of Tacitus' rhetoric through variations in key political and moral vocabulary.

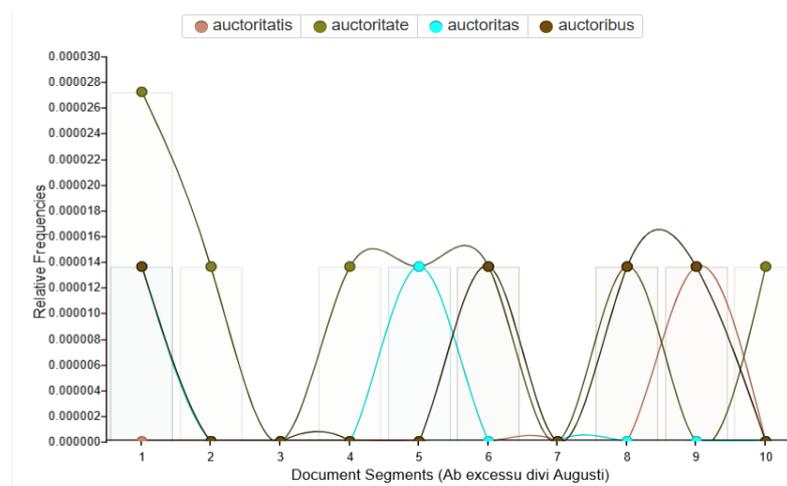


Figure 4. Trend analysis of auctoritas and its morphological variants across the segmented books of Tacitus' Annals.

## 6. Conclusion

This paper confirms the central insights of traditional scholarship on Tacitus' *Annals*, while revealing subtle variations in the portrayal of Tiberius and Nero. Consistent with Ronald Syme's reading, Tacitus depicts Tiberius in cautious, ambivalent tones and portrays Nero as cruel and excessive. However, numerical analyses of key terms reveal more nuances. These deviations from traditional scholarly findings imply that Tacitus intentionally invokes republican ideals to emphasise imperial abuses of power. These lexical patterns demonstrate how Tacitus calibrates moral judgements and guides readers' interpretations through word choice. By tracing changes in political and moral vocabulary, we can gain a clearer understanding of how he balances praise and criticism, republican memory and imperial reality. The refined evidence offered here enriches our understanding of Tacitus's historiographical art, providing a more textured view of the early empire that complements and extends existing narratives.

## References

- [1] Ronald Syme, *The Roman Revolution*, 1939, Oxford University press.
- [2] Ronald Syme, *Tacitus*, 1958, Oxford University press.
- [3] Rockwell, G., & Sinclair, S. *Hermeneutica: Computer-Assisted Interpretation in the Humanities*. Cambridge, MA: MIT Press, 2016.