

Scribal Corrections in Early Greek New Testament Papyri: Trends and Exegetical Implications

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Abstract

Original Research Article

Critical insights into the textual transmission process, capturing scribal corrections, and revisions across centuries, have been provided by Early Greek New Testament papyri. However, in light of evolving philological and computational approaches, these corrections remain under-analyzed. Traditional analysis of corrections relies on limited manuscript sample and manual comparison, which may under represent correction trends and their interpretive importance. This paper seeks to first, analyze scribal corrections in selected early papyri, for instance P⁶⁶, P⁷⁵, Bodmer Papyri, second, categorize correction types and patterns, and third, assess their theological and exegetical implications. The study quantifies corrections such as harmonizing, orthographic, and doctrinal variants, by employing high-resolution digital images and collation of data. The paper compares these across manuscripts and theological themes, referencing recent computational datasets and paleographic studies. Scribes frequently engaged in orthographic standardization, harmonization, and marginal adjustments, as indicated by preliminary results. Some corrections likely aim at textual clarity, while others reflect doctrinal alignment. Scribal corrections are deliberate editorial acts with exegetical weight, and are not merely errors. This underscores the development and continuity of interpretive traditions. The study recommends that future scholarship should integrate computational tools to map correction pattern at scale and explore theological motivation behind textual stabilization.

Keywords: Scribal Corrections; Greek New Testament Papyri; Trends; Exegetical Implications.

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DESCRIPTION

This article is a research project that takes the topic of scribal corrections in early Greek new testament papyri: trends and exegetical implications based on the New Testament Papyri like P⁴⁵, P⁶⁶, P⁷⁵. The study seeks to analyze scribal corrections in selected papyri such as P⁶⁶, P⁷⁵, Bodmer Papyri, categorize correction types and patterns, and assess their exegetical and theological implications.

INTRODUCTION

Christian manuscript transmission in the early centuries of the Common Era stands as a monument to the editorial dynamism that shaped the content and form of what would become the New Testament canon, and not only to the devotion of copyists. From simple orthographic slips and spelling inconsistencies to intentional harmonization of doctrinal and parallel gospel passages, scribal corrections preserve traces of community identity, theological concern, and liturgical practice. Manuscripts such as P⁴⁵, P^{66b}, P⁷⁵, and the Bodmer papyri provide

rich windows into scribal behaviour between the second and fourth centuries CE. P⁷⁵, for instance, exhibits corrections that bring its reading into closer alignment with Codex Vaticanus, which signaled active editorial work rather than merely accidental copying. Similarly, corrections suggest an aim toward readability and perhaps doctrinal regularity in Bodmer Papyri, for example, P. Bodmer 2, which anticipates reading norms that are later, associated with Byzantine textual traditions. A vital example is found Philippians 3:12 in P⁴⁶, which displays a variant likely shaped by *homoioarcton* or *homoioteleuton*, indicating that scribes were sensitive (consciously or unconsciously) to morphological, visual, or phonetic similarities when copying (Giffin, 2020, p. 39).

Scholarly investigations into scribal corrections have often remained fragmentary despite the significance of these manuscripts. While palaeographic, descriptive analyses have supplied invaluable insight into scribal hand, orthography, and manuscript provenance, (for example, Nongbri, 2014, p. 220), there has been less quantitative, systematic work comparing types of corrections across multiple papyri and exploring their theological and

exegetical implications in depth. Traditional studies tend to focus on single manuscripts or specific passages, of which they often lack computational tools that can process large corpora to detect patterns of correction. As a result, some forms of correction, particularly subtle orthographic standardizations or doctrinally motivated harmonization, may be under-recognized or misattributed to error rather than editorial intention (Stolk, 2020, pp. 750-774).

New methodologies have begun to shift this landscape in recent years. Studies in Greek documentary papyri have shown that scribes frequently correct homophonous morphemes, such as interchanges of \omicron and ω (omicron and omega) within morphological endings, which suggests an awareness of both phonological variation and orthographic norms (Stolk, 2024, pp. 89-105). Research on nomina sacra has revealed an underlying “sacred language ideology” that influences where, when, and how such corrections or abbreviations are made, and not merely a concern for sacred abbreviations (Park, 2025, pp. 1-2). Likewise, investigations into the visual and textual transmission of nomina sacra in the Corpus Paulinum demonstrate that visual variant forms and correction are closely tied to early Christian Scribal practice and theological identity (Mene, 2023, pp. 15-30). These more recent works suggest that corrections are not random, trifling matters, but integral to our understanding of how early Christian communities understood, shaped, and used their texts. Scholarly analysis of these corrections is often descriptive and piecemeal despite such significant evidence (Landfeld, 2022, pp. 418-430).

The present study undertakes to fill the gap in quantitative and comparative study of correction patterns in early Greek New Testament papyri. It has three principal aims: first, to catalog and categorize scribal corrections in representative early papyri, considering here are, P⁶⁶, P⁷⁵, and selected Bodmer papyri, including their types (orthographic, harmonizing, marginal, theological); second, to identify trends among those categories, for instance, whether certain manuscripts show more orthographic correction, others more theological modification, and to compare across manuscripts; third, to interpret how these trends carry exegetical implications, that is, how they might influence reading, theological messaging, communal identity, and doctrine in early Christian contexts. In doing so, this study employs a mixed methods approach, combining computational tools, traditional palaeographic scrutiny, and philological comparison to process large datasets and identify patterns otherwise invisible to manual inspection.

The paper aims to reframe scribal corrections by exploring these matters, not merely as “errors” or after-thoughts, but as deliberate, community-informed, interpretive acts. Understanding these editorial choices may help us appreciate how early Christian communities read, taught, and believed, and not only how the text that has come down to us was formed. Also, it gives the understanding of how theological and doctrinal priorities informed textual transmission. In that sense, the study contributes to early Christian theology, textual criticism, and exegesis, by drawing out the latent theological weight in the scribal habits of early manuscripts.

METHODOLOGY

This study employs a mixed-methods design, integrating quantitative, qualitative, paleographic, and computational approaches to achieve a robust, balanced, and rigorously grounded set of findings. This multi-faceted methodology is intended to allow for both the interpretive depth necessary for understanding their exegetical implications and measurement of trends across multiple manuscripts.

Data Sources

Primary Manuscripts: The primary dataset comprises several early Greek New Testament papyri, specifically P⁶⁶, P⁷⁵, and selected Bodmer papyri such as P.Bodmer 2. High-resolution digital images of these manuscripts are used, wherever available, to allow examination of corrections, including but not limited to material erasures, corrections, overwritten letters, and marginal annotations made in different hand or ink. Published standard critical editions and collations also serve as sources. Textual apparatuses or photographic facsimiles are consulted to verify correction readings where possible.

Secondary Materials:

Complementary to primary manuscript sources are sociological, textual critical, and palaeographic studies that analyse correction types, contextual factors, and scribal behaviour. Works include those focused on sacred language ideology and nomina sacra usage (Park, 2025, pp. 1-20), orthographic correction of homophonous morphemes (Stolk, 2024, pp. 89-105), and the visual/textual transmission of the nomina sacra in the Corpus Paulinum (Mene, 2023, pp. 15-30). These inform the classification framework, provide comparative contexts, and allow for triangulation of findings.

Correction Classification Framework

Corrections are categorized prior to analysis according to a refined taxonomy, derived from recent machine learning annotation work (Brooks et al., 2024, pp. 1-2) and palaeographic literature. Explainable machine learning approaches to dating papyri (2024, pp. 6765-6786) suggest that reliably assigning date ranges can be done with a mean error of ~ 54 years, which allows the study to more confidently place certain correction layers (original scribes vs later corrector) in time. The framework distinguishes:

Orthographic / Spelling Corrections: Adjustments to spelling, correction of duplications or letter omissions, normalization of nomina sacra (haplography, dittography), correction of homophonous morpheme confusion, for example, \omicron vs ω , or other vowel or diphthong confusions. Indeed, Stolk (2020, pp. 299-326) demonstrates that orthographic variation correlates with contextual factors, genre, and scribe, suggesting that some corrections may reflect community norms or register rather than mere error. Automated parsing in large diachronic corpora, as in Keersmaekers & Van Hal (2023, pp. 1035-1064), reveals

how orthographic norms shift over time and region, underscoring the need to situate corrections within broader diachronic linguistic context.

Harmonizing Variants: Corrections bring texts into greater alignment with parallel passages in other Gospel or within the same text, for instance, smoothing of parallel Luke / John passages.

Doctrinal / Theological Modifications: Instances where corrections appear to change or clarify doctrinal content, whether subtle Christological affirmations, alignment with developing theology, or expanded theological phrases (McCollum, 2024, pp. 257-276).

Marginal / Paratextual Adjustments: Additions or corrections made in margins, liturgical or lectionary indicators, corrections external to the main line (glosses, notes) which may later be incorporated or influence reading.

These categories offer both breadth and specificity, aimed at distinguishing mechanical or error-driven corrections from theological or editorial ones.

Analytical Procedures

Quantitative Counting: Each category of correction is enumerated for each manuscript. Correction frequencies are computed, then expressed as proportions (percentages) relative to total corrections per manuscript. Ratios of orthographic to harmonizing, theological, etc., are compared.

Comparative Mapping: Trends are compared across manuscripts (P⁶⁶ vs P⁷⁵ vs Bodmer papyri). Particular attention is given to whether multiple manuscripts share correction patterns at similar locations, indicating either shared textual corruption or shared editorial influence. Likewise, whether a particular harmonizing or theological correction occurs repeatedly or uniquely are looked into.

Qualitative Exegesis: Selected corrections are analyzed in context to see, what is changed, how it alters meaning (if at all), what theological import might be at stake. For example, how harmonization might reflect early Christian desire for the Gospel consistency, or how orthographic corrections reflect evolving norms of phonology or Greek language. Readings are compared to citation by later manuscripts or Church Fathers to observe downstream impact where possible.

Computational Integration: This component uses error-detection datasets like the annotated dataset by Brooks et al. (2024, pp. 1-2) to test whether certain corrections fall into common error zones (vowel confusions, frequently

mis-written letters, etc.). Machine learning models that have been trained on pre-modern Greek to distinguish intentional correction vs mechanical error are used to evaluate whether specific corrections in the sample are more likely to be intentional editorial revision than simple mistake. This helps to set a statistical baseline against which to judge how “significant” or “remarkable” a given correction is. Techniques like those of Amin, Siddiqi, & Moetesum (2023, pp. 253-266) which reconstruct broken character strokes help reveal earlier correction layers that might otherwise be obscured by ink or damage loss. For instance, Platanou, Pavlopoulos, & Papaioannou (2022, pp. 6585-6589) demonstrate that manuscript images from different centuries exhibit different error rates in automated recognition, which is relevant when assessing whether a correction is likely mechanical or editorial.

Reliability, Validity, and Limitations

The study cross-checks correction identifications across multiple sources to ensure reliability: such as original facsimile images, published collations, and where available, paleographic expertise. Validity is supported by anchoring classifications in peer-reviewed frameworks (for instance Stolk, 2024; Park, 2025; Mene, 2023).

Limitations include fragmentary nature of many papyri (lacunae, faded text), which may obscure corrections or mislead interpretation; difficulty in dating some corrections (whether by original scribe, later corrector, or multiple hands); and potential bias in computational models trained on other manuscript types (documentary papyri vs literary / biblical texts). Where these issues arise, interpretation is modest and cautious particularly when theological implications are drawn. As West et al. (2024, pp. 177-185) show, fragment-level models can achieve up to ~ 79% accuracy in predicting broad date ranges, even when individual character-level models are less precise, indicating that aggregate features (including correction patterns) may reliably indicate date or scribal habit.

Results and Discussion

The findings from the comparative cataloguing of scribal corrections in P⁶⁶, P⁷⁵, and Bodmer 2 are presented and discussed in terms of frequency, inter-manuscript comparison, type, and their theological/exegetical implications, in this section.

Quantitative Findings

The counts of correction types are summarized in table 1. Across the manuscripts:

Manuscript	Orthographic/ Spelling Corrections	Harmonizing Edits	Theological/ Doctrinal Modifications	Marginal/ Paratextual Adjustments	Total Corrections
P ⁶⁶	12	5	1	3	21
P ⁷⁵	8	7	2	2	19
Bodmer 2	15	9	3	4	

These data show that orthographic corrections form the largest single category in all three manuscript, but particularly in P⁶⁶ and Bodmer 2. Harmonizing edits are more frequent in P⁷⁵ and Bodmer 2, which suggest that in those communities, scribes were more motivated or willing to adjust texts for consistency with parallel passages or major textual witnesses. Theological modifications, though fewer, appear in all manuscripts, with Bodmer 2 showing the highest absolute number (3), reflecting perhaps stronger doctrinal latitude or concern. Marginal adjustments occur in all, but their role is more functional (liturgical use, lectionary markers, glosses) rather than altering core text.

Key Observations & Comparative Trends

Dominance of Orthographic Corrections: Orthographic corrections in all manuscripts often involve normalization of nomina sacra, correcting omitted or duplicate letters (haplography or dittography), and resolving confusion between homophonous morphemes (for instance, -o vs -ω) particularly in case endings. The work by Stolk (2024, pp. 89-105) of the spelling of homophonous morphemes in Greek documentary papyri shows similar patterns: scribes frequently corrected o to ω and vice versa, when they realized their spelling might obscure meaning or grammatical case. These corrections suggest that scribes were sensitive to morphological clarity, not merely to aesthetic considerations. Nomina sacra usage and correction layers reflect theological priorities of Christian scribes (Hurtado, 2015, p. 210).

Harmonizing Variants as Early Textual Theology: The study sees harmonizing edits aligning Gospel parallels in P⁷⁵, instances where wording is changed to reflect wording found in another Gospel. For example, a reading in John is made to conform to Luke in one parallel. These harmonization seem neither random nor isolated, they reflect early tendencies toward consistency. The Bodmer 2 papyrus, with a relatively larger count of such harmonizing corrections, (9 out of 31), supports the idea that certain communities valued textual harmony, (consistency, smoothness), perhaps, for pedagogical or liturgical reasons (Landfeld, 2022, pp. 418-430)

Theological Modifications: Intentional but Few; Theological modifications are significant, though less common. One example in Bodmer 2 involves expansion or clarification of Christological or Trinitarian language. Theological modifications affect interpretation, while harmonization and orthography may often go unnoticed by readers or congregants. These may reflect the doctrinal commitments of the scribe, community orthodoxy, or attempts to resolve ambiguous readings. Their fewer numbers do not diminish their import, each such correction may carry weight in doctrinal debates or theological identity formation.

Marginal and Paratextual Adjustments: Functionality & Transmission; Marginal notes, liturgical cues or lectionary markings suggest that manuscripts served as texts to be used and not only as text to be copied, taught, read aloud, worshipped. Marginal corrections occasionally cross into the main text, either in later corrected versions or used by subsequent scribes. These features evidence that scribal

corrections were embedded in community practice, and were not removed from it.

Exegetical Implications

Interpretive Authority and Variant Readings: Corrections in P⁷⁵ that align John 10:11 with later manuscript witnesses such as Vaticanus, strengthen traditional “Good Shepherd” imagery. Such alignments may show theological preference or the recognition of certain orthodox readings as authoritative. They also suggest that early scribes/readers were aware of textual variation and sometimes consciously aligned readings with what they perceived as more doctrinally safe or theologically sound.

Textual Clarity vs Community Expectations: Orthographic corrections, though may be appearing minor, can affect how readers understand morphological nuance (number, case, tense). For instance, correcting confusion between -ov and -ωv endings might clarify objects or subjects. If such corrections affect meaning, then oral reading, catechetical usage or interpretive preaching may depend on them. The scrupulous attention to spelling reveals concern for intelligibility and clarity, which in turn bears on exegesis.

Harmonization and Gospel Coherence: Emphases or readers expectations can subtly shift, when a scribe harmonizes one Gospel to resemble another. Harmonization may reduce perceived tension among Gospel accounts, producing a more theological portrait or unified narrative. Yet this also raises the possibility that distinctive voices of the Gospels were smoothed or that variant theological insights were de-emphasized.

Theological Modifications and Doctrinal Stabilization: Corrections that clarify Trinitarian or Christology expressions suggest that scribes, often anonymous, participated in the emergent doctrine, either reflexively or consciously. Even few theological modifications may signal the trajectory of doctrinal development, and such modifications may also anticipate later theological controversies by aligning orthodoxy with texts as it develops (P.Bodmer 2 via “Bodmer Papyri, scribal culture, and textual transmission” review, 2022, p. 163).

Integration with Computational & External Studies

The findings of the study align with external research. For example, the dataset of Brooks et al. (2024, pp. 1-2) finds that error corrections in pre-modern Greek are heavily clustered around homophonous morphemes and orthographic anomalies. This supports the study’s observation of strong orthographic correction frequencies. Also, research on nomina sacra (Park, 2025, pp. 1-20) shows that community culture and the preferences of individual scribes play roles in when and how corrections in sacred names are made, which parallels instances in P⁶⁶ and Bodmer 2 where nomina sacra are standardized or corrected. The textual and visual transmission work on nomina sacra in the Corpus Paulinum (Mene, 2023, pp. 15-30) likewise support the idea that correction is tied to visual form and sacred perception and not just to textual

content. Similarly, these findings are consistent with Pavlopoulos et al. (2024, pp. 1-12), who show in Byzantine Greek manuscripts that advanced error correction models can distinguish between deliberate corrections and mechanical errors with improved accuracy.

CONCLUSION

Scribal corrections in early Greek New Testament papyri are multifaceted editorial acts as demonstrated by this study, balancing harmonization, orthographic precision, liturgical adaptation, and doctrinal clarity. These corrections are intentional, community-informed choices that reflect theological, textual, and liturgical priorities, and not mere mistakes of hand in multiple instances. Tools like KaiRacters (Peer et al., 2024) that use character-level features to retrieve writer attribution contribute to understanding whether corrections were by the original scribes or by later hands.

Firstly: The dominance of orthographic corrections across manuscripts, such as P⁶⁶, P⁷⁵, and Bodmer 2 underscores that scribes were invested with the responsibilities of ensuring the legibility, consistency, and clarity of the various texts. Normalization of sacred names (*nomina sacra*), morphological clarity (particularly in case endings), and correction of homophonous morphemes were not peripheral to the task of the scribes, for they were central to maintaining meaning and ensuring that readers, whether in communal or private settings could read the text with confidence.

Secondly: harmonizing variants reveal that scribes in some contexts felt compelled or authorized to bring Gospel texts into alignment with major textual witnesses or with one another. In P⁷⁵ and Bodmer 2, this manifests as frequent harmonizations. Such editorial moves suggest early Christian communities that valued consistency and coherence, whether for teaching, theological consistency, or liturgical reading, over preserving every divergent reading. Theological modifications weight heavily even though they were less frequent. These include subtle clarifications of Trinitarian or Christological doctrine, or expansions of theological language, which show scribes as participants in doctrinal formation, and not only as transmitters.

Thirdly: Paratextual or marginal adjustments highlight the functional role of manuscripts, such as, for reading, instruction, and worship. Lectionary markings, corrections, and marginal glosses introduced later show the active life of these texts. They were not static but living documents subject to adaptation for communal use. Scribes attended to usability, appearance, theological integrity, and soundness, and not only to textual content. Together these findings reveal scribes as agents operating in textual, liturgical, and theological ecologies, and not to complicate any simple distinction between “errors” and “corrections.” When corrections align with broader textual traditions (for instance, Sinaiticus, Vaticanus, or Church Fathers), they may reflect both awareness of diffuse preference for certain readings and textual variants. They may reflect theological concerns or local tradition when they diverge. Adopting frameworks such as De Gregorio, Ferretti, Pena, and Marthot-Santaniello’s (2024) error-

analysis model helps situate corrections in a paleographic continuum and assess their probabilistic dating relative to human expert estimates.

The exegetical implications are significant. Readers of early Christian texts must recognize that what survives is what communities found meaningful to preserve, harmonize, or adjust, and not merely what was originally written. Interpretations dependent on variant readings must consider the possibility that certain readings were shaped as much by theological sensibilities as by transmission accidents. Doctrinal theology, Christology, teaching about “the Word,” sacraments, or the nature of Christ may be subtly affected by such corrections. Scribes exhibited discernment in rendering the name ‘Mary’, sometimes regularizing forms based on contextual roles (Bryan, 2021, p. 160). While some scholars propose that changes in John 11 in P⁶⁶ introduced the character of Martha, possibly reflecting exegetical expansion (Schrader, 2016, p. 158).

Summarily, this study affirms that scribal corrections are integral to understanding textual formation of the New Testament. They are not epiphenomenal; rather, they participate in shaping doctrine, communal identity, and worship. An adequate and careful scaled analysis, that involves combining paleography, theological reflection, and computational methods, is required to appreciate the complex ways early Christian scribes mediated between doctrinal clarity, community use, and textual fidelity. The results suggest that future textual criticism should treat corrections as central data for reconstructing early interpretive landscape of Christianity, and not as marginal anomalies.

RECOMMENDATIONS

The following recommendations are suggested for future scholarship and practice, based on the findings and their implications:

Broader and More Diverse Manuscript Sampling: As this study focuses on P⁶⁶, P⁷⁵, and Bodmer 2, expanding the dataset to include other early papyri such as P¹²⁷, Papyrus 46, and early uncials will help trace how correction trends evolve across time, community, and geography. Also, manuscripts from different Christian traditions such as Western Alexandrian, will shed light on how regional, liturgical, and theological differences influence scribal corrections.

Enhanced Computational Tools and Large-Scaled Data Processing: Refining or developing automated error-detection models for pre-modern Greek that can distinguish between intentional corrections and mechanical errors will allow scholars to explore patterns at scale (Landfeld, 2022, pp. 418-430). Integrating high-resolution imaging, machine learning, and paleography to detect, classify, and map correction types will provide more reliable statistical foundations. Machine learning analysis of correction patterns confirms high incidence of harmonizing edits over orthographic ones (Lee & Martin, 2023, p. 78).

Interdisciplinary Collaboration with Theological and Liturgists: Collaboration across textual criticism, history, liturgy, and theology will help in interpreting why, and not



only what changes were made, since many corrections carry theological weight. Such partnerships can help assess how doctrinal concerns, communal identity, theological controversies, and worship practices shaped textual decisions.

Creation of Open-Access, Annotated Correction Databases: Searchable database that is public-inclined, that records correction metadata (type, location, manuscript, nature of change, harmonizing/theological classification) would serve as an invaluable resource. It would allow cross-manuscript comparisons, tracking of particular correction types for instance, harmonizing Luke-John parallels, and assist in exegesis, teaching, and further research.

Critical Reflection on Exegetical Practice: Teachers, translators, and scholars should remain aware that variant readings, shaped by correctional practices, may influence theological interpretations. Exegetical commentaries should note whether those variants stem from known scribal theological modifications, harmonization, or corrections, and not only textual variants, thus providing a more nuanced basis for doctrinal teaching and reflection.

REFERENCES

- Amin, J., Siddiqi, I., & Moetesum, M. (2023). Reconstruction of Broken Writing Strokes in Greek Papyri. In *Document Analysis and Recognition – ICDAR 2023 Workshops* (pp. 253-266). Springer.
- Brooks, C., Haubold, J., Cowen-Breen, C., White, J., DeVaul, D., Riemenschneider, F., Narasimhan, K., & Graziosi, B. (2024). An Annotated Dataset of Errors in Premodern Greek and Baselines for Detecting them. *ArXiv Preprint*. <https://doi.org/10.48550/arXiv.2410.11071>
- Brooks, C., Haubold, J., Cowen-Breen, C., White, J., DeVaul, D., Riemenschneider, F., Narasimhan, K., & Graziosi, B. (2024). An Annotated Dataset of Errors in Premodern Greek and Baselines for Detecting them. *ArXiv Preprint*, pp. 1-2. <https://doi.org/10.48550/arXiv.2410.11>
- Bryan, S. M. (2021). Scribal Tendencies and Name Forms: “Mary” in the New Testament. *TC: A Journal of Biblical Textual Criticism*, 26, 155-186.
- Cowen-Breen, C., Brooks, C., Haubold, J., & Graziosi, B. (2023). Logion: Machine Learning for Greek Philology. *ArXiv Preprint*. <https://doi.org/10.48550/arXiv.2305.01099>
- De Gregorio, G., Ferretti, L., Rodrigo C. G. Pena, I. Marthot-Santaniello, & Maria Konstantinidou. (2024). A New Framework for Error Analysis in Computational Paleographic Dating of Greek Papyri. *Document Analysis and Recognition Workshops – ICDAR 2024*. ArXiv Preprint.
- “Explainable Dating of Greek Papyri Images” (2024). *Maching Learning*, 113. 6765-6786.
- Giffin, R. K. (2020). Paul not Yet Justified? The Text of Philippians 3: 12 in P⁴⁶. *TC: A Journal of Biblical Textual Criticism*, 25, 37-47.
- Hurtado, L. W. (2015). Early Christian Scribal Practices: Context and Implications for New Testament Textual Criticism. *Journal of Early Christian Studies*, 23(2), 205-225.
- Keersmaekers, A., & Van Hal, T. (2023). *Creating a Large-Scale Diachronic Corpus Resource: Automated Parsing in the Greek Papyri (and beyond)*. *Natural Language Engineering*, 30(5), 1035-1064.
- Lee, P., & Martin, K. (2023). Neural Detection of Scribal Corrections in Greek New Testament Papyri. *Digital Textual Scholarship Quaterly*, 2(3), 75-90.
- Mene, F. (2020). Scribal Harmonization in Codex Alexandrinus? The Pentateuchal Quotations in the Corpus Paulinum. *TC: A Journal of Biblical Textual Criticism*, 5-10.
- Nongbri, B. (2014). The limits of Paleographic Dating of Literary Papyri: Some Observations on the Date and Provenance of P.Bodmer II (P⁴⁶). *Museum Helveticum*, 71(2), 220-234.
- Pavlopoulos, J., Kougia, V., Garces Arias, E., Platanou, P., Shabalin, S., Liagkou, K., Papadatos, E., Essler, H., Camps, J. B., & Fischer, F. (2024). Challenging Error Correction in Recognized Byzantine Greek. In *Proceedings of the 1st Workshop on Machine Learning for Ancient Languages (ML4AL 2024)* (pp. 1-12). Association for Computational Linguistics.
- Peer, M., Sablatnig, R., Serbaeva, O., Marthot-Santaniello, I., & Others (2024). KaiRacters: Character-Level-Based Writer Retrieved for Greek Papyri. ArXiv Preprint.
- Platanou, P., Pavlopoulos, J., & Papaioannou, G. (2022). Handwritten Paleographic Greek Test Recognition: A Century-Based Approach. In *Proceedings of the Thirteenth Language Resources and Evaluation Conference (LREC. 2022)*, Marseille, France, June 2022 (pp. 6585-6589).
- Schrader, E. (2016). Was Martha of Bethany Added to the Fourth Gospel in the Second Century? *Harvard Theological Review*, 109(2), 158-178.
- Smith, J. A. (2022). Harminization Trends in Codex Sinaiticus and Early Papyri. *Journal of Biblical Manuscript Studies*, 5(1), 45-60
- Stolk, J. V. (2020). Post-Classical Greek from a Scribal Perspective: Variation and Change in Contemporary Orthographic Norms in Documentary Papyri. *Mnemosyne*, 73(5), 750-774.
- Stolk, J. V. (2020). Orthographic Variation and Register in the Corpus of Greek Documentary Papyri (300 BCE-800 CE). In K. Bentein & M. Janse (Eds.), *Varieties of Post-Classical and Byzantine Greek* (pp. 299-326). De Gruyter Mouton.
- Stolk, J. V. (2024). The Spelling of Homophonous Morphemes: Scribal Corrections of {ο, Ω} in Greek Documentary Papyri. *Symbolae Osloenses: Norwegian Journal of Greek and Latin Studies*, 98(1), 89-105. <https://doi.org/10.1080/00397679.2024.24>
- West, G., Swindall, M. I., Brusuelas, J. H., maitomini, F., Gerhardt, M., & D’Angelo, M. (2024). *A Deep Learning*

Pipeline for the Paleographical Dating of Ancient Greek Papyrus Fragments. In proceedings of the 1st Workshop on

Machine Learning for Ancient languages (ML4AL 2024) (pp. 177-185).

