

Luke the Physician: Some Notes on the Internal Evidence

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Abstract

Is there internal evidence to support the early church tradition that Luke was a physician? Scholars throughout the nineteenth and early twentieth century gravitated toward this position, but due to the refutations brought against it by Henry Cadbury, it has largely been abandoned. This paper argues that the case deserves new consideration. It delineates the three main pillars of Cadbury's counterargument, discussing new scholarship and academic resources that undermine the strength of each of his points against the internal evidence.

1. Introduction

The case that Luke's medical language supports the traditional attribution has a long, controversial history. Almost 150 years ago, William Hobart amassed some 400 alleged medical terms that Luke used in his writings, but Henry Cadbury noted that ninety percent of these also occurred in Josephus or in the combined writings of Lucian of Samosata and Plutarch.¹ Cadbury's first objection stems from this observation: how do we delineate medical

1. W. K. Hobart, *The Medical Language of St. Luke* (Dublin, 1882); Henry Cadbury, *The Style and Literary Method of Luke* (Harvard University Press, 1919), 40–41. Many were initially convinced by Hobart's argument: R. J. Knowling, 'The Medical Language of St. Luke', *Biblical World* 20.4 (1902): 260–271, <https://doi.org/10.1086/473055>; John C. Hawkins, *Horae Synopticae: Contributions to the Study of the Synoptic Problem* (Clarendon Press, 1899), 189; William Ramsey, *St. Paul the Traveller and the Roman Citizen* (Hodder & Stoughton, 1900), 205; more are listed by Cadbury, *Style and Literary Method*, 40–41. Several continued to promote refined versions of Hobart's argument into the early 1900s, e.g. James Moffat, *Introduction to the Literature of the New Testament* (C. Scribner's Sons, 1911), 263; William Ramsey, *Luke the Physician and other Studies in the History of Religion* (Hodder & Stoughton, 1908); Theodor Zahn, *Einleitung in das Neue Testament*, 3rd

language?² ‘Examples of medical language’, Cadbury commented, ‘should be words that are used elsewhere only or mainly in medical writings’ if they are to have significant weight.³ Second, Cadbury argued that Matthew and Mark sometimes use medical terms not found in Luke.⁴ Third, Cadbury showed that a non-medical writer like Lucian could use alleged medical terms as frequently as Luke does.⁵ Cadbury did much to turn the tide against Hobart’s argument, and most Lukan scholars today remain unpersuaded by the argument from medical language.⁶ But the argument deserves a second look. Cadbury’s points may not, in fact, be as grounded as they appeared 100 years ago.

2. Medical terms

First, an extensive recent analysis of documentary papyri led Thomas Grafton to conclude ‘by comparison, Luke’s writings make more frequent use of named illnesses than what we found in the documentary papyri.’⁷ Additionally, the

ed., trans. M. W. Jacobus (C. Scribner’s Sons, 1906), 146–160; Adolf von Harnack, *Lukas der Arzt* (J. C. Hinrichs, 1906).

2. Cadbury further comments: ‘In fact, the medical writings in Greek, unlike our own, apparently never had a restricted professional vocabulary’ (‘Lexical Notes on Luke-Acts: II. Recent Arguments for Medical Language’, *JBL* 45 1/2 (1926): 190, <https://doi.org/10.2307/3260178>).

3. Cadbury, *Style and Literary Method*, 49.

4. Cadbury, *Style and Literary Method*, 47.

5. Cadbury, *Style and Literary Method*, 68–70.

6. Craig Keener: ‘Most scholars today rightly follow the argument of Cadbury (against specifically medical language) rather than the contrary argument of Hobart, T. Zahn, or Harnack’ (*Acts: An Exegetical Commentary* (Baker Academic, 2012), 1:2149, n. 89). Scholars may still find Luke’s language consistent with the traditional attribution as it is delineated in sources like Col 4:14, the Muratorian Canon, and the Anti-Marcionite Prologue, e.g.: Darrell Bock, *Luke 1:1–9:50*, BECNT (Baker, 1994), 7; F. F. Bruce, *Commentary on the Book of the Acts: The English Text with Introduction, Exposition, and Notes*, NICNT (Eerdmans, 1977), 29; Keener lists further examples in *Acts*, 2150, n. 91.

7. Thomas Grafton, ‘Health and Healing in the Documentary Papyri: A Comparison with the Healing Texts in Luke-Acts’, PhD Dissertation (Asbury Theological Seminary, 2017), 81–82, <https://place.asburyseminary.edu/ecommonsatsdissertations/1148/>. Grafton goes on,

In fact, we may open this up to the Gospels in general (especially the Synoptics) to say that the gospel writers make greater use of medical terminology than what was typical in the documentary papyri. Most references to illness in the documentary papyri speak only in general terms (cf. νόσος or ἄρρωστος in Chapter 1). This disparity is especially striking when we consider that the documentary papyri include tens of thousands of documents compared to the four Gospels and Acts.

Grafton’s chart on p. 82 illustrates that Luke’s Gospel contains the widest array of references to specific illnesses.

Thesaurus Linguae Graecae (TLG), a searchable digital database of over 11,000 ancient Greek documents and 125 million words, now allows us to determine that some of Luke's words are used mostly or exclusively by medical writers.⁸ Since the TLG categorises its texts according to genre, it provides a neutral standard by which to delineate medical occurrences; although the resulting lists of medical terms in Luke or Lucian will now be much shorter than Hobart's or Cadbury's were, they will be more clearly and objectively delineated. For Lukan terms mostly used in medical writings, we have ὀδυνάω ('to cause pain', Luke 2:18; 16:24, etc.), ῥῆγμα ('ruin/tear', Luke 6:39), ἀνακαθίζω ('to sit/set up', Luke 7:15), ἰκμάς ('moisture', Luke 8:6), ὕδρωπικός ('suffering from dropsy', Luke 14:2), ἐλκόω ('to be covered with ulcers (pass.)', Luke 16:20), ὀθόνιον ('small linen cloth', Luke 24:12), προσπήγνυμι ('to fix to', Acts 2:23), ἀνάψυξις ('refreshment', Acts 3:19), διόρθωμα ('setting right', Acts 24:2), ὑποζώννυμι ('to undergird', Acts 27:17), ἀσιτία ('lack of food', Acts 27:21), and θερμή ('warmth', Acts 28:3). For those used exclusively by medical writers, we have συγκυρία ('accident', Luke 10:31), ἀνωτερικός ('upper', Acts 19:1), and δυσεντέριον ('dysentery', Acts 28:8). We also have combinations in Luke's text exclusive to medical writers, such as τρῆμα/βελόνη ('eye/needle', Luke 18:25), and combinations almost exclusive, such as μέγας/πυρετός ('great/fever', Luke 4:38); finally, we have the proximity of τραῦμα/ἔλαιον/οἶνος, describing the use of oil and wine to treat injury (Luke 10:34), otherwise found only in Galen.⁹

The extent to which this list comprises convincing internal evidence of the traditional attribution requires a deeper look at certain terms and how Luke uses them. Can Luke's medical descriptions, and not merely his medical terminology, also weigh into this discussion? Finally, is the breadth of this list sufficient to point to Luke's medical background when compared to the writings of others like Lucian of Samosata? After all, as Cadbury comments,

any sound argument for the medical bias of Luke's vocabulary not only must show a considerable number of terms possibly or probably medical,

8. The full corpus is searchable at <https://stephanus.tlg.uci.edu>. (An institutional or individual subscription is required.) I follow the citation format of the TLG when documenting search results (Latin author, *Latin title*, Volume. Page. Section (if applicable). Line).

9. Occurrences of terms in the TLG up to the end of the second century are considered. A comparable list of terms found in Lucian that are mostly attested in medical literature is presented in Section 3. Footnote 31 contains a brief list of such terms from the Gospels of Matthew and Mark. For Galen's description of treating wounds with oil and wine, see Galenus, *Ad Glauconem de medendi methodo libri ii*, 11.83.6.

but must show that they are more numerous and of more frequent occurrence than in other writers of his time and degree of culture.¹⁰

First, let us consider some items from the list in more detail, such as the difference in the Greek form of Mark's 'eye of the needle' (Mark 10:25) in Luke 18:25. Luke uses a different word for both 'eye' (τρομαλία to τρήμα) and 'needle' (ράφίς to βελόνη). The resulting combination of Greek words have only three attestations outside of Luke: one in Galen's medical glossary of Hippocrates and the second and third in medical contexts by the physicians Galen and Oribasius. As Lawrence Bliquez observes, Mark's term ράφίς is rarely used to depict a surgical needle.¹¹ Both domestic and specifically pointed surgical needles were used by ancient physicians, but Galen's description of 'the finest needle' clearly refers to a surgical needle; indeed, in this instance Galen's τὴν βελόνην τρήματος refers not to this needle's eye, but to the extremely tiny hole left by the needle itself: a pin prick.¹² Oribasius's usage of the term appears to describe a medical probe with a small loop (eye) at the end, while Galen's glossary of Hippocratic terms qualifies the term κύαρ (hole) with the words τὸ τῆς βελόνης τρήμα (the hole of the needle).¹³ The terms κύαρ and τρήμα, as in the case of Oribasius, are used interchangeably, with the former term also used exclusively in medical writings.¹⁴

Also telling is the word Luke uses to describe the region traversed by Paul in Acts 19:1: ἄνωτερικός.¹⁵ It is widely attested as a medical term, often in the sense of 'upper', whether in emetic contexts or in reference to treatments regarding the upper versus the lower parts of the body; Deissmann and Cadbury are content to refer to such terms as 'statistical accidents', but this becomes

10. Cadbury, *Style and Literary Method*, 50.

11. Lawrence Bliquez, *The Tools of Asclepius: Surgical Instruments in Greek and Roman Times* (Brill, 2015), 147, <https://doi.org/10.1163/9789004283596>.

12. Galenus, *An in arteriis natura sanguis contineatur*, 4.709.8 (see vol. 4, p. 708, line 1 for Galen's description of the 'finest needle'). An English translation is available: Galen, *On Respiration and the Arteries*, trans. David Furley and J. S. Wilkie (Princeton University Press, 1984), 149–151.

13. Galenus, *Vocum Hippocratis glossarium*, 19.115.10; Oribasius, *Collectiones medicae*, 44.21.12.1.

14. Κύαρ has nine attestations in the TLG: seven medical and two lexicographical.

15. Medical attestations support the sense of 'upper' while many modern translations of Act 19:1 prefer 'interior' (ESV, NLT, NRSV, NIV, etc.). This preference results from interpretive and logistical considerations regarding Paul's journey, e.g. William Ramsay interprets it as 'higher districts' of the interior river valleys (*St. Paul the Traveller*, 265). C. K. Barrett notes 'the precise meaning of this phrase is uncertain. The adjective is rare and is not used elsewhere as a geographical term.' *Acts 15–28: A Critical and Exegetical Commentary on the Acts of the Apostles*, ICC (T&T Clark, 1998), 892.

less convincing when we survey the alleged medical terms Cadbury catalogued from the Synoptic authors and Lucian.¹⁶ When we narrow his list to lemmata only used elsewhere by medical writers, only six terms remain (see Table 1).

Table 1: Exclusive medical terms from Cadbury's lists (C8th BCE – C2nd CE)

Author	Lemma	Meaning	Medical attestations	Medical authors	Questionable attestations
Mark	σμυρνίζω	to mix with wine	2	1	6
Lucian	ἐπιχλιαίνω	to warm slightly	5	2	0
Lucian	ἡμιτόμιον	half	1	1	0
Luke	δυσεντέριον	dysentery	1	1	0
Luke	συγκυρία	by accident, chance	2	1	0
Luke	ἀνωτερικός	upper	16	6	0

Four terms in Table 1 are good candidates for statistical accidents. These terms (σμυρνίζω, ἐπιχλιαίνω, ἡμιτόμιον, and συγκυρία) bear no clear medical connotation.¹⁷ Luke's term for dysentery (δυσεντέριον, Acts 28:8) marks an unusual alternative to the more common attic form, δυσεντερία, which he shares only with the medical writer Aelius Promotus. The lemma ἐπιχλιαίνω is the clearest example of a medical term used by Lucian, shared only with Galen and Hippocrates, the most prolific medical authors of antiquity.¹⁸ Yet

16. See Cadbury's comment in 'Lexical Notes', 199. The term ἀνωτερικός is used in medical writings up through the fourth century CE (according to the dates assigned in TLG) from Hippocrates, Severus, Rufus, Galen, Pseudo-Galen, Aelius Promotus, and Oribasius. Cadbury provides lists of alleged medical language for Matthew, Mark, and Lucian in *Style and Literary Method*, 47, 68–70; the rest of Cadbury's nineteen terms listed on p. 47 and the seventy-five terms on pp. 68–70 are not exclusively used by medical authors, although several could be categorised as 'mostly medical' (see footnote 31 below).

17. Of the fifteen alleged medical words used exclusively in the NT by Matthew/Mark, as listed by Cadbury, only one is a strong candidate as a medical term: σμυρνίζω (Mark 15:23, 'to flavour with myrrh'). Pedanius Dioscorides uses the term twice, and it also occurs in Cyranides, a medical-magical treatise of uncertain provenance concerning the healing power of various species, as well as in Acts of Peter. I designated these six latter attestations as 'questionable' because they are not medical, but I did not deem them significant enough to disqualify σμυρνίζω from the table. It is possible that the occurrence in Acts Pet. 40.7 was inspired by the Marcan usage.

18. Hippocrates, *De morbis popularibus*, 4.1.29.6; 6.7.1.42; *Coa praesagia* 611.2; *De mulierum affectibus* i-iii, 87.2; Galen, *In Hippocratis librum vi epidemiarum commentarii* vi,

Luke's term ἀνωτερικός is distinct from all medical terms in both its number and variety of medical attestations.¹⁹ Significantly, Luke here applies a medical term to a non-medical context: an occasion wherein the medical understanding is taken up and applied in a different setting. In this instance, the widely used cognate ἀνώτερος was readily available to Luke.²⁰ Does this occasion betray an unusual familiarity with the term ἀνωτερικός – a term that belongs in medical literature and experience, but which Luke applies to a geographical context?

Also worthy of discussion are the words 'great fever' in Luke 4:38 to describe the fever of Peter's mother-in-law. Here Luke adds the word 'great' (μέγας) to Mark's term for fever (πυρετός); Cadbury calls this example 'one of the oldest and most effective arguments for medical terminology.'²¹ His attempt to undercut the strength of this example fails, and Luke's usage likely betrays an ancient medical classification of high-grade versus low-grade fevers.²² We

17a.1008.3.

19. Hippocrates, *De mulierum affectibus i-iii*, 217.18; *De superfetatione*, 29.18; *De purgantibus*, 54; Severus Iatrosophista, *De instrumentis infusoriis seu clysteribus ad Timotheum*, 17.9, 21.7; Rufus, *Quaestiones medicinale*, 16.8; Galen, *De methodo medendi libri xiv*, 10.969.9; Pseudo-Galen, *Introductio seu medicus*, 14.754.6; Aelius Promotus, *Δυναμείων*, 1.125, 1.127, 1.129, 124.1.1, 124.1.1, 126.1.1, 127.5.2, 128.1.1, 128.2.1.

20. The term ἀνώτερος has well over three thousand attestations, including occurrences in the LXX (1 Kgs 10:22 LXX; Jdt 1:8; 2:21).

21. Cadbury, 'Lexical Notes', 194. Cadbury is incorrect when he states 'I find no instance of "great fever" in Hippocrates' ('Lexical Notes', 202; cf. *De locis in homine*, 24.1; *De mulierum affectibus i-iii*, 60.15, and the terms μέγας and πυρετός are used together exclusively in medical writers with the single exception from the depiction of a legendary birth scene described by both Posidonius and Diodorus Siculus – see Diodorus Siculus, *Bibliotheca Historica*, 5.28.1–2 (cf. *FGrHist* 87 F280)).

22. Cadbury admits that Galen discusses the clinical distinction but highlights that Galen disagrees with it ('Lexical Notes', 194); however Galen's disagreement is irrelevant given that his theories on fevers were highly theoretical (In-Sok Yeo, 'Hippocrates in the Context of Galen: Galen's Commentary on the Classification of Fevers in Epidemics VI', in *Hippocrates in Context*, ed. Philip van der Eijk (Brill, 2005), 439–442). Cadbury discusses two additional usages to undermine the medical classification. First, he quotes Aulus Cornelius Celsus, whom Cadbury claims is a 'layman', but is, in fact, a prolific medical author. Further, Cadbury quotes the philosopher Alexander of Aphrodisias, a contemporary of Galen, but the source, *De Febribus Libellus*, is widely agreed to be spurious, possibly originating with the physician Alexander Trallianus or an otherwise unknown physician named Alexander. We therefore have no examples of laypersons discussing the classification of 'great fever'. Cadbury, *Style and Literary Method*, 45 is correct to note Luke's fondness for the term μέγας as a descriptive adjective (used 143 times in Luke-Acts), so we cannot be certain that Luke's usage entails the clinical distinction.

could similarly investigate other items from the list of Luke's medical terms, but these are among the most intriguing.

3. Knowledge

Contrary to Cadbury's first objection, Luke certainly appears to use certain words or combinations of words exclusively or mostly used by medical writers. Luke's description of 'great fever' also points to a weakness in Cadbury's second objection. While Mark occasionally includes more descriptive healing accounts than Luke, a deeper understanding of ancient medical knowledge reveals a distinct pattern.²³ Whereas Luke consistently works from the same tradition as Mark's text, his unique wording often clarifies or intensifies the medical descriptions we find in Mark. Aside from 'great fever', Luke elsewhere adds that the man with leprosy from Mark 1:40 is not merely leprous but is 'filled with leprosy' (πλήρης λέπρας; Luke 5:12).²⁴ Annette Weissenrieder argues that a thanatological perspective ties the healing narratives in Luke's gospel together; more than Mark or Matthew, Luke emphasises the duration of illnesses, which was exceptionally important for diagnosis in the Hippocratic Corpus, consistently increasing the perceived severity of illnesses.²⁵ In other words, Weissenrieder demonstrates that there is a coherence to the distinctive features of the Lukan healing narratives, but this consistency is only appreciated if medical knowledge on the part of the evangelist is assumed.

To give some examples, in Luke 9:37-43, although Luke's account lacks any hint of paralysis compared to Mark's description of a seizing boy (cf. Mark 9:17-18,26), an understanding of ancient medical knowledge readily accounts for this. Ancient physicians had two theories regarding epilepsy, and Mark's

23. Audrey Dawson observes that 'Jesus' healing seems even more prominent in Luke's than in Mark's gospel, with stories from other sources, and comments on healing by Jesus in the Lukan description' but suggests that Luke's descriptions are 'less realistic' (*Healing, Weakness and Power: Perspectives on Healing in the Writings of Mark, Luke and Paul*, Paternoster Biblical Monographs (Paternoster, 2008), 188). Annette Weissenrieder's study, discussed below, contradicts this (*Images of Illness in the Gospel of Luke: Insights of Ancient Medical Texts* (Mohr Siebeck, 2003)). Surprisingly, Dawson does not cite or engage with Weissenrieder's study, even though it was published several years prior to her monograph.

24. The term for leprosy here is not equivalent to the modern term. (See Matthew Thiessen, *Jesus and the Forces of Death: The Gospels' Portrayal of Ritual Impurity within First Century Judaism* (Baker, 2020), 43-45).

25. Weissenrieder, *Images of Illness*, 314-316.

two simultaneous symptoms are inconsistent with that ancient view.²⁶ Luke depicts the boy as suffering only from a seizure in accordance with the ancient diagnosis of phlegm on the brain. This occurrence of epilepsy from buildup of phlegm is associated with a cry prior to seizure and foaming at the mouth, as described in Luke's account (Luke 9:39).²⁷ Again, in Luke 8:40-42, 49-56, his account is arranged differently from the account we find in Mark's Gospel concerning Jairus's daughter (Mark 5:22-24, 35-43). Luke emphasises the girl's age, the point at which she is given something to eat, and he adds the return of her 'spirit'; all these unique features are explained on Luke's reading of this incident as a case of 'hysteria phenomena'.²⁸ Hysteria phenomena impacted women at the age of marriageability and included the inability to eat and the loss of breath, so Luke's medical interest is able to explain why he might have stressed the girl's age and emphasised her recovery along these lines.²⁹ Positing a deeper understanding of ancient medical knowledge can explain distinctive features of Luke's text compared to parallel versions from Mark. Weissenrieder states 'One thing we can say with certainty: the author of the Gospel of Luke had some knowledge of ancient medicine.'³⁰

26. This point is missed by Dawson, *Healing, Weakness and Power*, 155, who only provides the perspective of a modern medical practitioner without reference to ancient theories of epilepsy.

27. Weissenrieder, *Images of Illness*, 275-282.

28. Weissenrieder gives an overview of the significance of these redactions in *Images of Illness*, 266-267. She notes that while the reference to the girl's eating is 'mentioned after the parents' astonishment and seems strangely tacked on at the end of the story in the Marcan text, in the Gospel of Luke, food – together with πνεῦμα – is given primary significance' (*Images of Illness*, 263; cf. Mark 5:43; Luke 8:55).

29. For the full discussion, see Weissenrieder, *Images of Illness*, 257-267. She surveys various other features in Luke's text that could be accounted for by his medical knowledge (e.g. Luke's location of the lepers in Luke 17:1-11 in the Valley of Jezreel, an area prone to receiving East and South winds associated by medical authors with skin disease (*Images of Illness*, 214-224); Luke's additional comment about the Gadarene from Luke 8:26-39 going into the desert alone for long periods, in line with comments from Aretaeus and Caelius Aurelianus about the disease of mania (*Images of Illness*, 311)). Dawson also notes the tendency of physicians since the time of Hippocrates to be precise about whether the right or left side was affected, and she provides several ancient examples (Hippocrates, *Epidemics I*, Case VII; *Prognostics*, VII; *On Wounds of the Head*, XIX); she notes that Luke also follows this observational practice (Luke 6:6; 22:51), but because Luke only mentions the 'right' side in these few occasions, she suggests a theological motive (*Healing, Weakness and Power*, 153-154).

30. Weissenrieder, *Images of Illness*, 335.

4. Education

As noted in the Introduction, Cadbury aimed to demonstrate that Lucian used as much medical language as Luke did. If we take Cadbury's list of Lucian's medical language, assess it using the TLG, and compare it with our list of Luke's medical terms from Section 1, a similar number of terms do emerge.³¹ Luke's use of exclusively medical terms, especially ἀνωτερικός, is more significant (see Table 1 above and the adjoining discussion), but terms from Lucian that are those mostly attested in medical literature are similar in number to Luke's: γαλακτώδης (tepid), διασήπω (clear/distinct), ἐντεριώνη (inmost part), σκίλλα (squill), λύζω (to sob violently), ἄσαρκος (without flesh), ἐπιβρέχω (to pour water on), κολλύριον (salve), κόρυζα (mucous discharge), ἐλλέβορος (hellebore), μολύβδιος (leaden), and μαστίχη (mastic). In short, the TLG reveals that Luke and Lucian display a comparable number of medical terms.³²

31. Many of Cadbury's medical terms from Lucian turn out to be incorrect, falling short of even 'mostly medical' usage; for the full list of Lucian's medical terms according to Cadbury, see Cadbury, *Style and Literary Method*, 68–70. Matthew and Mark have a few terms shared mostly with medical authors: αἰμορροέω, ἄνηθον, ἄρρωστος, διυλίζω, κύμινον, πυρέσσω, and πώρωσις (a medical term also used metaphorically by Paul). Aside from the lower number of medical terms in the combined writings of Matthew and Mark versus Luke-Acts (although, as Thomas Grafton notes, there are more medical descriptions and terms in the Synoptic Gospels overall versus the documentary papyri – see footnote 7 above), there is a qualitative difference as well. Four of the eight terms in Matthew/Mark that are shared mostly or exclusively with medical authors refer to purity practices or herbs, which are then used elsewhere in medicinal practice; three of these terms (ἄνηθον/'dill', κύμινον /'cumin', and διυλίζω/'to refine/strain out') come from only two verses (Matthew 23:23–24). None of Luke's sixteen terms refer to herbs or purity practices. Some are non-medical terms that are simply more common in medical writings, others are medical terms used by Luke in physical or medical descriptions (e.g. ὑδρωπικός, ἐλκόω, δυσεντέριον), and others are used in occasions wherein Luke possibly applies a medical term to a non-medical context (e.g. ὑποζώννυμι, ἀνωτερικός).

32. Cadbury himself asserts that 'for any comparison of Lucian with Luke it would not be fair to match the whole extent of Lucian's writings against Luke's work of only 150 pages' (*Style and Literary Method*, 66), and his list of Lucian's terms is therefore drawn from select writings (from *Alexander*, the *Death of Peregrinus*, and the second half of *True History*) to make the analysed vocabulary proportional. Cadbury's select texts create about 75 pages for Lucian, according to Cadbury's renderings, versus the 150 pages of Luke-Acts. Is this, then, a fair comparison? It is, because while the word count of Luke-Acts is greater than Lucian's select works, the number of vocabulary words in these corpora is similar. The ratio of unique lemmata to words in Lucian's corpus, using the TLG statistics tool, is 28 per cent, while the ratio of lemmata to words in Luke-Acts is only 12.45 per cent. In other words, Luke reuses certain lemmata with considerably greater frequency than Lucian does, using about 12 lemmata every 100 words while Lucian uses 28 lemmata every 100 words. An additional point cannot be quantified but also cannot

This, however, should be placed in its proper context. Are these two authors, as Cadbury suggests, comprised of a similar ‘degree of culture’ to the extent that such a correlation should be expected?

Lucian was extensively educated and held a great interest in medicine; he was ‘a travelling show-lecturer, ready to give a rhetorical exhibition on almost any subject’.³³ Could a similar scenario account for Luke’s medical language? Recent studies on Luke’s literary style and level of education bring into question whether Luke ever undertook the tertiary level of education enjoyed by contemporary biographers.³⁴ Cadbury comments that Lucian and Luke share ‘a great vocabulary’, but the relevant data to substantiate this claim are lacking.³⁵

Why should Luke’s level of education be an important consideration when aiming to compare his alleged medical language to that of Lucian? The reason is articulated by Cadbury himself when he suggests that ‘a well-educated person such as Luke, evidently even without special medical training, would use more technical terms than a less educated person.’³⁶ This explains why Cadbury goes out of his way to contrast Luke’s vocabulary, his ‘command of the

be denied: while Luke’s use of traditional material did not prohibit him from inserting his own vocabulary, it restricted it (the extent to which we cannot know). Related to this is that over 40 per cent of Luke’s terms that are shared mostly or exclusively with medical authors come from the second half of Acts; over 25 per cent come from the last ‘we’ passage of Luke 27:1–28:16 alone, wherein Luke’s descriptions are most vivid (see Luuk van de Weghe, ‘Acts 27: The Cerebral Scars of Shipwreck’, *TynBul* 70.2 (2019), <https://doi.org/10.53751/001c.27722>). Cadbury’s selection from Lucian, therefore, does not prejudice the evidence in favour of Luke.

33. E. T. Withington, ‘Some Greek Medical Terms with Reference to St. Luke and “Liddell and Scott”’, *Proceedings of the Royal Society of Medicine* 12 (1919), 127.

34. See, for example, Osvaldo Padilla, ‘Hellenistic παιδεία and Luke’s Education: A Critique of Recent Approaches’, *NTS* 55.4 (2009), <https://doi.org/10.1017/S0028688509990051>. Sean Adams mostly agrees with Padilla (‘Luke and Progymnasmata: Rhetorical Handbooks, Rhetorical Sophistication and Genre Selection’, in *Ancient Education and Early Christianity*, ed. A. W. Pitts and M. R. Hauge, LNTS 533 (Bloomsbury T&T Clark, 2016), 144; c.f. M. W. Martin, ‘Progymnastic Topic Lists: A Compositional Template for Luke and other Bioi?’ *NTS* 54 (2008), <https://doi.org/10.1017/S0028688508000027>). See also Steve Reece, *The Formal Education of the Author of Luke-Acts*, LNTS 669 (T&T Clark, 2022), <https://doi.org/10.5040/9780567705907>, in which Reece admits only that Luke likely received the first and second levels of formal Greek education (Reece, *Formal Education*, 31).

35. Cadbury, *Style and Literary Method*, 50. His footnote to this comment (n. 88) only highlights the expansive vocabulary of Lucian, and Cadbury (*Style and Literary Method*, 1–4) never compares Luke’s vocabulary with ancient authors that he relates to Luke’s medical language.

36. Cadbury, *Style and Literary Method*, 46.

Greek language', and Luke's 'degree of culture' with that of the other synoptic authors but to compare Luke's literary complexity and degree of culture with that of Josephus, Philo, Plutarch, and Lucian.³⁷ Cadbury clearly implies that an author's cultural background and education is relevant when considering any speaker's proclivity to use alleged medical language. This sentiment is echoed by Luke Timothy Johnson and Howard Clark Kee, who perceive Luke's language as merely reflecting educated Greek.³⁸

We could use several examples to illustrate the reasoning behind this. To illustrate the point generally, a college-educated person might be more likely to use words such as 'epistemology', 'empiricism', 'inference', or 'metaphysics' even if they are not formally trained in philosophy. More specifically, it might be surprising for a county building official to describe a heart attack as 'cardiac arrest' or high blood pressure as 'hypertension', while these medical terms would be less surprising in academic publications. Similarly, we should be less surprised if, as Cadbury insists, a 'well-educated person', say, like Lucian, would incorporate relatively more medical language into his vernacular, especially if he is a well-read rhetorical exhibitionist. But, again, the inverse is also true. We should be surprised to see considerable medical language in Luke's vocabulary if Luke's level of education or rhetorical training appears to be less developed than that of Lucian – if key elements of Luke's Gospel read more like a technicians' manual than a rhetorical treatise. This would be particularly salient if we came to learn that both the literary style of Luke's Gospel and that of medical writings in Graeco-Roman antiquity reflected the trade language, not of literary elites, but of semi-educated clerks and bureaucrats.

This is precisely what scholarly advances since the time of Cadbury have discovered. One telling element of a recent study on Luke's level of education, conducted by the classicist Steve Reece, is the relatively few allusions to classical Greek literature in Luke's text compared to extensive allusions found in Josephus, Philo, and Plutarch. Reece surveys only a limited number of potential allusions in the former but finds 'many thousands' of allusions in Plutarch, 'hundreds' in Philo, and 'an astonishing number' in Josephus.³⁹ Reece states explicitly:

37. Cadbury, *Style and Literary Method*, 46, 50.

38. Luke Timothy Johnson, *Writings of the New Testament: An Interpretation*, 2nd ed. (SCM, 1999), 214; Howard Clark Kee, *Medicine, Miracle and Magic in New Testament Times*, SNTSMS 55 (Cambridge University Press, 1986), 79, <https://doi.org/10.1017/CBO9780511554988>, (discussed and referenced by Dawson in *Healing, Weakness and Power*, 153).

39. Reece, *Formal Education*, 46; cf. 72, 75, 76–77, 80–82, 83, 89, etc.

There is little reason to believe that Luke continued his formal education into the third stage of advanced grammar, rhetoric, and philosophy; perhaps after the second stage he chose instead to pursue the study of medicine through an apprenticeship (cf. the tradition of Luke as the ‘beloved physician’ of Col. 4:14).⁴⁰

The comparison between Luke the Evangelist and Lucian of Samosata is not only less informative than Cadbury indicates but may even point toward a key literary distinction that tilts the evidence in favour of Luke’s traditionally ascribed vocation. As Loveday Alexander observes, Luke’s style corresponds best with what Lars Rydbeck termed *Fachprosa*, reflecting a ‘literate but not literary’ level, in association with the ancient technical writers, under which a physician would be classified:⁴¹

Luke shows no signs even of the incipient awareness of classicizing norms that we see in Josephus or Chariton, much less what we find in Plutarch, Arrian or Cassius Dio. Like the writers of *Fachprosa*, Luke uses a style of Greek which signally fails to match up to the newly-defined standards of an ever more rigorous literary language.⁴²

40. Reece, *Formal Education*, 31, n. 1.

41. Loveday Alexander, *The Preface to Luke’s Gospel: Literary Convention and Social Context in Luke 1.1–4 and Acts 1.1*, SNTSMS 78 (Cambridge: Cambridge University Press, 1993), 169–172, <https://doi.org/10.1017/CBO9780511554827>; Lars Rydbeck, *Fachprosa, vermeintliche Volkssprache und Neues Testament: Zur Beurteilung der sprachlichen Niveauunterschiede im nachklassischen Griechisch*, Acta Universitatis Upsaliensis, Studia Graeca Upsaliensia 5 (Berlingska Boktryckeriet, 1967); Lars Rydbeck, ‘On the Question of Linguistic Levels and the Place of the New Testament in the Contemporary Language Milieu’, in *The Language of the New Testament: Classic Essays*, ed. Stanley E. Porter, JSNTSup 60 (Sheffield Academic Press, 1991): 191–204. These observations are also supported by a recent linguistic analysis conducted by Emilio Matricciani and Liberato De Caro (‘A Deep-Language Mathematical Analysis of Gospels, Acts and Revelation’, *Religions* 10.4 (2019), <https://doi.org/10.3390/rel10040257>), in which they analyse word frequencies, the number of words per sentence, the number of characters per word, the number of words per interpunctuations, and the number of interpunctuations per sentence; even when taking Acts by itself, it is linguistically more complex than the Gospels but clearly less complex than Plutarch, Josephus, and Polybius (see Matricciani and De Caro, ‘Analysis’, Figure 17 and Figure 18). A similar result is provided via a stylometric analysis conducted by David Mealand, wherein Luke-Acts is concluded to exhibit a style between that of the Semitic writings of the LXX and the Hellenistic Greek of Dionysius of Halicarnassus and Polybius (‘Hellenistic Greek and the New Testament: A Stylometric Perspective’, *JSNT* 34.4 (2012), <https://doi.org/10.1177/0142064X12442846>).

42. Loveday Alexander, ‘Septuaginta, Fachprosa, Imitatio: Albert Wifstrand and the Language of Luke-Acts’, in *Acts in Its Ancient Literary Context: A Classicist Looks at the Acts of the Apostles*, LNTS 298 (London: T&T Clark/Continuum, 2005), 244.

It is, then, *the combination* of Luke's special medical vocabulary with his 'literate but not literary' style that is telling. In her extensive analysis of Luke's prologue, Alexander states that while her study does not constitute proof for the tradition of Colossians 4:14, it gives 'the collateral observation that Luke's preface is the kind of preface a doctor might write, especially if he was a doctor whose acquaintance with Greek literature went little further than the handbooks of his trade.'⁴³ In Luke's prologue, we have the kind of preface we would expect if the view of traditional authorship were true: a historiographical preface written in the brief, understated manner of a piece of technical literature.⁴⁴

In summary, each of Cadbury's three pillars against the argument for the traditionally ascribed vocation of the Third Evangelist is undermined by advances in scholarship. The increased availability of relevant data justifies a reappraisal of the case in favour of the description found in Colossians 4:14: 'Luke the beloved physician'. The internal evidence from Luke's medical language, his medical knowledge, and his literary style is completely consistent with the traditional attribution and can withstand the concerns raised against it by Cadbury's objections.

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43. Alexander, *The Preface*, 177.

44. Sean Adams' critique of Alexander's is noteworthy, and certain historiographical elements in Luke's prologue are beyond question. See 'Luke's Preface (1.1-4) and its Relationship to Greek Historical Prefaces: A Response to Loveday Alexander', *JGRChJ* 3 (2006). The prologue has both historiographical and technical elements.

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