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The Structure of Luke in Stichometric Analysis

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The author of the third Gospel was an excellent storyteller. In later centuries he was even called a painter. Offered here is a demonstration of how he used a painter's methods when designing the parables and the book as a whole. For this the proportions will be analyzed in some stories as well as in the book overall.¹

This view's presupposition is that the authors of the New Testament (as probably classical authors generally) disposed their books very carefully applying the ancient standard line for measuring Greek prose: the *stichos* of 15 syllables. In order to measure the sizes of ancient Greek texts it is quite easy to count words or characters, a function included in modern word processing programs.² Some interpreters have counted lines in the modern text editions, Nestle-Aland or others.³ Only a few have counted syllables which requires a tedious word by word procedure.⁴ However, there is no doubt that the ancient publishers of prose texts used the *stichos* which is the size of the average hexameter. This has been corroborated on the basis of the available data of Greek and Latin stichometry.⁵ The thesis that ancient authors used this standard line, not only the publishers, has been established in recent years by analyzing the gospels and epistles of the NT. Thus far results on Mark, Romans, 2 Corinthians, Ephesians, Hebrews, and 2-3 John have been published.⁶ Articles on Matthew and other writings are being prepared.

¹ Enlarged version of a paper presented at the International SBL-Meeting in Rome in July 2019. I wish to thank Dr. Beverly Olson-Dopffel for linguistic assistance.

² See R. Meynet, *L'Évangile de Luc* (Rhétorique sémitique 8; Pendé 2011) 985: size comparison "en nombre de signes, espaces inclus, accents et ponctuation exclus".

³ See U. Luz, *Das Evangelium nach Matthäus (Mt 1–7)* (EKK I/1, 5th ed.; Düsseldorf, Neukirchen-Vluyn 2002) 254: lines of NA²⁶ (1979) in Matt 5:21-48 / 6:19–7:11; 325 n. 1: words and letters in Matt 5:21-32 / 5:33-48.

⁴ See J. Smit Sibinga, "Zur Kompositionstechnik des Lukas in Lk.15:11-32", *Tradition and Re-Interpretation in Jewish and Early Christian Literature*. FS Jürgen Lebram (eds. J.W. van Henten et al.) (StPB 36; Leiden 1986) 97-113, at 100.

⁵ See F.G. Lang, "Schreiben nach Maß: Zur Stichometrie in der antiken Literatur", *NovT* 41 (1999) 40-57.

⁶ See F.G. Lang, "Maßarbeit im Markus-Aufbau: Stichometrische Analyse und theologische Interpretation", *BN* 140 (2009) 111-134; 141 (2009) 101-115; *idem*, "Adam – where to put you? The Place of Romans 5 in the Letter's Composition", *Textual Boundaries in the Bible*

The same approach is to be tested here with Luke. First some of Luke's parables will be analyzed. Then the main caesuras in the structure of Luke will be discussed. Thirdly, the sizes of the main sections will be established in *stichoi* which implies an analysis of their structures; this makes it possible to calculate the proportions between them. Finally the results on Luke are compared with those of other NT writings.

1. Sizes of Luke's Parables

In chapter 15 the evangelist has collected three parables under the topic "lost and found again". The first one on the lost sheep (15:3-7) is also found in Matt 18:12-14; in Luke the joyous celebration motif is added. That is also the point in the two others (which are without parallels) on the lost coin (15:8-10) and the prodigal son (15:11-32). The whole section is a uniform composition introduced by Jesus' debated table fellowship with tax collectors and sinners (15:1-2). It seems that the author was relatively free when composing, not depending on pre-formulated sources.⁷

The lengths of the introduction and of the three parables are remarkable, measuring 5, 13, 8, and 55 *stichoi* (see *table 1*). The four numbers belong to the so-called "Fibonacci sequence" named in the 19th century after the medieval mathematician Leonardo of Pisa, son of Bonaccio, who lived around 1200.⁸ Yet it was already known in antiquity and described by Nicomachus of Gerasa, a mathematician of the 2nd century AD, delivering older tradition of Pythagorean offspring.⁹ Each number of the sequence is the sum of the two previous numbers: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55 ..., and the ratio between two successive numbers is approximating the irrational so-called golden ratio = 0.6180339 ...

In Luke 15, the types of text are different (a narrative introduction and three parables) and the lengths differ (from 5 to 55 *stichoi*), the parable of the prodigal son being the longest of all of Jesus' parables. In terms of *stichoi*, however, the size of each part matches a Fibonacci number (see *table 1*), and it seems that this

(Pericope 9; Leuven 2017) 189-218; *idem*, "Remarkable Proportions in the Disposition of 2 Corinthians", *CBQ* (forthcoming); *idem*, "Ebenmaß im Epheserbrief: Stichometrische Kompositionsanalyse", *NovT* 46 (2004) 143-163; *idem*, "Observations on the Disposition of Hebrews", *NovT* 61 (2019) 176-196; *idem*, "Disposition und Zeilenzahl im 2. und 3. Johannesbrief: Zugleich eine Einführung in antike Stichometrie," *BZ* 59 (2015) 54-78.

⁷ The first parable is Q material (parallel in Matt 18:12-14), the source of the second one is dubious, see M. Wolter, *Das Lukasevangelium* (HNT 5; Tübingen 2008) 524.

⁸ The name was introduced by É. Lucas, "Recherches sur plusieurs ouvrages de Léonard de Pise", *Bulletino di bibliografia e di storia delle scienze matematiche e fisiche* 10 (Rome 1877) 129-193, 239-293, at 135.

⁹ See Nicomachus, *Introd. arithm.* 2.28.6, 10; cf. Iamblichus (c. 300), *In Nicom. arithm. intr.* (ed. Pistelli/Klein) 117.20-23; 118.9-18.

did not happen at random, but that the author was well aware of this and used these sizes intentionally.

Table 1: The parts of Luke 15 and their length

Introduction	15:1-2: measuring	5	(4:05)	<i>stichoi</i>
Lost sheep	15:3-7:	13	(12:11)	
Lost coin	15:8-10:	8	(7:10)	
Prodigal son	15:11-32:	55	(53:06)	

To be precise, these *stichoi* numbers are rounded up. In the last column of *table 1*, the exact results are listed in brackets: before the colon the full *stichoi* of 15 syllables, after the colon the additional syllables. The introduction and the two small parables consist of one paragraph each so that the rounding up is without problems. The long parable, however, measures 53:06 *stichoi* in exact counting which implies a change in the UBS text. In 15,16 the rather rough, i.e. more difficult variant γεμίσει τὴν κοιλίαν αὐτοῦ ἀπό (“fill his stomach with”) of the codices A Δ Θ Ψ etc. is preferred over χορτασθῆναι ἐκ (“satisfy his hunger with”) of the usually preferable good witnesses \mathfrak{P}^{75} & B.¹⁰ In this wording the Greek text is longer by six syllables, but when rounded up the total is still 55 *stichoi*.

In our understanding the parable of the prodigal son consists of five paragraphs according to the three main characters father (vv. 11-12, 20-24, 28b-32), younger (vv. 13-19) and older son (vv. 25-28a).¹¹ The narrative is often delimited differently. The refrain-like conclusions in vv. 24, 32 constitute a caesura before v. 25, but sometimes already verse 24c (“And they began to celebrate”) is understood as the beginning of the new part.¹² However, “they” refers back to the father and his slaves (v. 22), and the older son as the antagonist enters the scene only in v. 25a, explicitly outside the house. The two sections 15:11-24 and 15:25-32 seem to represent the two parts of a little drama, the “complication” and “dénouement”; the shift between them coincides with the “change from good fortune to bad”, though at the end it remains an open question whether the older son’s anger will result in a catastrophe.¹³ In the first section, the encounter of father and son is certainly a scene in itself. It begins with the son’s setting off

¹⁰ Usually the longer text is preferred, see F. Bovon, *Das Evangelium nach Lukas* (Lk 15,1–19,27) (EKK 3/3; Düsseldorf, Zürich, Neukirchen-Vluyn 2001) 41; Wolter, *Lukas-evangelium*, 533.

¹¹ See F.G. Lang, “Lukas 15,1-3.11b-32“, *Gottesdienstpraxis A/3*, vol. 4 Exegesen (Gütersloh 1992) 123-126, at 124.

¹² See Smit Sibinga, “Kompositionstechnik”, 100; Bovon, *Lukas*, 3:50.

¹³ Cf. Aristotle, *Poet.* 18.1: δέσις and λύσις; 7.12: ἐξ εὐτυχίας εἰς δυστυχίαν μεταβάλλειν (transl. LCL).

in v. 20a, not only with the father's welcome in v. 20b.¹⁴ After the short exposition (vv. 11-12) the longest scene including the monologue (vv. 17-19) deals with the younger son in the "distant country" (vv. 13-19).¹⁵ In the second section, a new scene begins with the father's going outside in v. 28b, not already in v. 28a.¹⁶

The lengths of the five scenes are listed in *table 2*. Rounded up, the three scenes of the first section have 35 *stichoi*, the two of the second section 20, a ratio of 7 / 4. If we combine the first two scenes dealing with the younger son's misery and the three dealing with the father's debated feast, the subtotals are 21 and 34 *stichoi*, again numbers of the Fibonacci sequence.

Table 2: Parable of the prodigal son (Luke 15:11-32)

<i>The misery of the younger son</i>		15:11-19:	21	(20:05)	<i>stichoi</i>
- Father: property divided	15:11-12:		4	(3:06)	
- Younger son: in distant country	15:13-19:		17	(16:14)	
<i>The father's debated celebration</i>		15:20-32:	34	(33:01)	
- Father: feast for the younger son	15:20-24:		14	(13:14)	
- Older son: anger at the feast	15:25-28a:		8	(7:11)	
- Father: invitation of the older son	15:28b-32:		12	(11:06)	

Three other parables shaped by Luke and typical for his style have similar totals and subtotals in terms of *stichoi* as seen in *table 3*. The pericope of the good Samaritan (10:25-37) has a total of 34 *stichoi*. The discourse between Jesus and the lawyer can be divided into three scenes: the debate on doing the law (10:25-29) as a first dialogue in five parts, then the story of the Samaritan in the center (10:30-35), finally a tripartite dialogue on "who is my neighbor?" (10:36-37); the solemn beginning in v. 30 seems to indicate this caesura.¹⁷ Yet the break is often set before v. 29,¹⁸ the parable then framed by the question (vv. 29-36) and measuring 21 (20:10) *stichoi*, the rest, the dialogue of four and two parts (vv. 25-28, 37), $10 + 3 = 13$ *stichoi*.

Second example: the pericope of the rich fool consists of a long introduction (12:13-15) followed by the parable (12:16-21). The rounded *stichoi* numbers look like a sequence of Fibonacci numbers: $8 + 13 = 21$ (7:02 + 12:08 = 19:10).

¹⁴ Against Klein, *Lukasevangelium*, 525; cf. Wolter, *Lukasevangelium*, 527, 535, 537: in translation 15,20a-24c as unit, in exegesis vv. 20b, 24c as inaugurating new parts.

¹⁵ Differently Klein, *Lukasevangelium*, 525; Wolter, *Lukasevangelium*, 533: monologue as separate scene.

¹⁶ Against Klein, *Lukasevangelium*, 527.

¹⁷ Ὑπολαβὸν ὁ Ἰησοῦς εἶπεν; cf. break in NA²⁸.

¹⁸ See H. Cousin, *L'évangile de Luc* (Paris 1993) 158; J.B. Green, *The Gospel of Luke* (NICNT; Grand Rapids, MI 1997) 424; Bovon, *Lukas*, 3:83; Klein, *Lukasevangelium*, 386; Wolter, *Lukasevangelium*, 391.

Thirdly, the parable of the rich man and Lazarus (16:19-31) has a Fibonacci number as total: 34 *stichoi* exactly, only one syllable is missing (33:14). The story consists of three parts: vv. 19-22 tell of the two men's living conditions until their death, the rest, the rich man's dialogue with Abraham in vv. 23-31, is located "in Hades".¹⁹ The dialogue has two themes: first the rich man is begging for himself, for relief in his agony (vv. 23-26), then for his brothers that they be warned (vv. 27-31).²⁰ The subtotals are remarkable, albeit no Fibonacci numbers, because the first and third parts (vv. 19-22, 27-31) are equal in size (10:00 and 10:01 *stichoi*), and so are the two halves of the middle part (vv. 23-24, 25-26 with 6:12 and 7:01 *stichoi*), dealing with the rich man's agony and Abraham's answer. It seems that the author took notice of these proportions.

Table 3: Three other typically Lukan parables

<i>The good Samaritan</i>	10:25-37:	34	(32:04)	<i>stichoi</i>
- The double commandment of love	10:25-28:	10	(9:05)	
- Who is my neighbor – an example	10:29-36:	21	(20:10)	
- Who is my neighbor – the answer	10:37:	3	(2:04)	
<i>The parable of the rich fool</i>	12:13-21:	21	(19:10)	
- Introduction on the danger of wealth	12:13-15:	8	(7:02)	
- Parable	12:16-21:	13	(12:08)	
<i>The rich man and Lazarus</i>	16:19-31:	34	(33:14)	
- The two men until death	16:19-22	10	(10:00)	
- The rich man's agony in Hades	16:23-26	14	(13:13)	
- The rich man begging for his brothers	16:27-31	10	(10:01)	

Many other parables have been collected in Luke's Gospel. Not all of them are interesting in terms of Fibonacci numbers. In two examples, however, he seems to adjust the Markan and the Q materials to sizes he favors. In *table 4*, the parable of the sower (8:4-8) is compared with the other synoptic versions. The version in Mark 4:2b-9 measures 14 *stichoi* (13:14), in Matt 13:3-9 as well as in Luke it is reduced to 13 *stichoi* (13:00 / 12:13), apparently because the two evangelists prefer this number. The other example is the house parable at the end of the Sermon on the Mount or Plain. Both versions (Matt 7:24-27 / Luke 6:47-49) have the same length of 13 *stichoi* (12:12 / 12:07). In Matthew, the two parts of the story are of the same size, being 6:08 and 6:04 *stichoi*. In Luke, the part on the house founded on rock is enlarged, the part on the house without

¹⁹ Usually the break is set before v. 22, see Bovon, *Lukas*, 3:111; W. Eckey, *Das Lukasevangelium* (Neukirchen-Vluyn 2004) 2:718; Klein, *Lukasevangelium*, 551; Wolter, *Lukasevangelium*, 557. Yet the new scene begins rather with the new place.

²⁰ The break is marked by οὖν in v. 27.

foundation is shortened. The ratio is 8 / 5 *stichoi* (7:12 / 4:10), again a ratio of Fibonacci numbers.

Table 4: Two parables with synoptic parallels

<i>The parable of the sower</i>	Matt 13:3-9:	13	(13:00)	<i>stichoi</i>
	Mark 4:2b-9	14	(13:14)	
	Luke 8:4-8	13	(12:13)	
<i>The two houses</i>	Matt 7:24-27	13	(12:12)	
	Luke 6:47-49	13	(12:07)	
- built upon the rock	Matt 7:24-25	6½	(6:08)	
	Luke 6:47-48	8	(7:12)	
- built without foundation	Matt 7:26-27	6½	(6:04)	
	Luke 6:49	5	(4:10)	

Unfortunately, in ancient rhetorical handbooks no advice is given telling an author to apply the numbers of this series when writing a story or book. Yet these examples seem to demonstrate that at least the author of Luke did it. The reason is obviously an esthetic one. The good stories of the Gospel deserve a good form. The literary technique can be compared with that of sculpture. In analyzing, for instance, the Doryphoros of the famous sculptor Polykleitos one can detect many proportions derived from Fibonacci numbers, but theoretical instructions are missing. His theoretical book, his *Canon*, was unfortunately lost. A reference in Plutarch seems to allude to this tradition: “in every opus, the beauty is accomplished, so to speak, from many numbers having resulted in one due proportion by a certain symmetry and harmony”.²¹ It resembles a general statement on the numbers and proportions we have observed in Luke’s parables.

2. Structuring the Gospel of Luke

What are the main sections in Luke? Interpreters agree that there are main caesuras after the prologue (1:1-4)²² and before Jesus’ decision to go to Jerusalem in 9:51. They disagree, however, on the number and on the exact placement of further main caesuras.

²¹ Plutarch, *Mor.* 45c-d (*De audiendo* 13): ὡς ἐν ἔργῳ γε παντὶ τὸ μὲν καλὸν ἐκ πολλῶν οἷον ἀριθμῶν Polykleitos’ *Canon* by F. Hiller, “Zum Kanon Polyklets”, *Marburger Winckelmann-Programm 1965* (Marburg 1966) 1-15, at 4. ²² Differently L. Sabourin, *L’Évangile de Luc* (Roma 1987) 51; S. Grasso, *Luca* (Roma 1999) 33: no main caesura after 1:1-4.

²² Differently L. Sabourin, *L’Évangile de Luc* (Roma 1987) 51; S. Grasso, *Luca* (Roma 1999) 33: no main caesura after 1:1-4.

Before 9:51 the beginning of Jesus' public activity in Galilee (4:14-15) is regarded as a main step in the course of the Gospel by most commentaries.²³ Jesus is introduced solemnly as "filled with the power of the Spirit" and a summary tells that "a report about him spread through all the surrounding country" and that "he began to teach in their synagogues and was praised by everyone." Another caesura is marked by the extensive historical synchronism in 3:1-2 dating the beginning of John the Baptist's mission. Since the stories in 3:1-4:13 are still telling about the preparation of Jesus' public ministry, the passage 1:5-4:13 belongs together in this respect as the first main section of Luke, dealing with John the Baptist and Jesus' beginnings,²⁴ though it is often divided into two major sections.²⁵ In the following chapters, there is no especially highlighted caesura so that the passage 4:14-9:50 is to be regarded as the gospel's second main section.²⁶

After 9:51 two further main caesuras are usually set, the one when Jesus arrives in Jerusalem, the other when the passion story in the strict sense begins, but there are different opinions about their exact positions. The end of the long journey is usually seen in 19:27, after the parable of the ten pounds and prior to the entry into Jerusalem,²⁷ sometimes even before this parable (19:11-27), after the Zacchaeus episode in Jericho (19:1-10).²⁸ Yet the definite destination of the journey is the temple which Jesus reaches only in 19:45, immediately cleansing it.²⁹ The caesura is marked by the summary in 19:47-48: "Every day he was

²³ Differently W. Grundmann, *Das Evangelium nach Lukas* (ThHK 3; Berlin 1961) v: 3:1-4:30 as second main section of seven; H. Schürmann, *Das Lukasevangelium I* (1,1-9,50) (HThK Sonderband; Freiburg 1984) x: 3:1-4:44 as first main section, followed by 5:1-19:27; W. Wilkens, "Die theologische Struktur der Komposition des Lukasevangeliums", *TZ* 34 (1978) 1-13, at 6: 1:5-9:50 as first main section, 5:1-9:50 as second subsection; Grasso, *Luka*, 35: 3:1-4:44; Klein, *Lukasevangelium*, 7: 1:5-4:44.

²⁴ Differently E. Schweizer, *Das Evangelium nach Lukas* (NTD 3; Göttingen 1982) 264: 3:1-9:50 as second main section; Eckey, *Lukasevangelium*, 1:2-3: 1:5-2:52 and 3:1-4:13 as two of twelve main sections; Wolter, *Lukasevangelium*, 17-19: thirteen main sections in Luke's "oberste Gliederungsebene", five at the beginning (1:1-4; 1:5-80; 2:1-52; 3:1-20; 3:21-4:13).

²⁵ See J. Ernst, *Das Evangelium nach Lukas* (RNT; Regensburg 1977) 723; G. Schneider, *Das Evangelium nach Lukas* (ÖTK 3/1; Gütersloh and Würzburg 1977) 7; I.H. Marshall, *The Gospel of Luke* (NIGTC; Exeter 1978) 131; J. Kremer, *Lukasevangelium* (NEchtB 3; Würzburg 1988) 8; Cousin, *Luc*, 5; Green, *Luke*, 25; D.E. Garland, *Luke* (Zondervan ECNT; Grand Rapids, MI 2011) 39.

²⁶ See Ernst, *Lukas*, 724; W. Wiefel, *Das Evangelium nach Lukas* (ThHK 3; Berlin 1988) vi; F. Bovon, *Das Evangelium nach Lukas* (Lk 1,1-9,50) (EKK 3/1, Zürich and Neukirchen-Vluyn 1989) 14.

²⁷ Cf. Bovon, *Lukas*, 1:15: "bis wahrscheinlich 19,27".

²⁸ See Marshall, *Luke*, 401; Klein, *Lukasevangelium*, 359.

²⁹ Cf. F.S. Spencer, *Luke* (THNTC; Grand Rapids, MI, 2019) 254: main break after 19:44.

teaching in the temple ...” It is debatable whether the exact break is prior or following.³⁰ If we put the main caesura before this summary, Jesus’ visit in the temple covers only the two vv. 45-46, and his only activity is the cleansing. If we include the summary, then it is stressed that the temple itself is the destination as the place of his teaching activity and of the conflict: “^{47b}The chief priests, the scribes, and the leaders of the people kept looking for a way to kill him; ^{48b}but they did not find anything they could do, for all the people were spell-bound by what they heard.” Therefore we favor the break after the summary and regard the long travel report in 9:51–19:48 as the third main section of the book.³¹

The same uncertainty applies to the summary in 21:37-38: “Every day he was teaching in the temple, and at night he would go out and spend the night on the Mount of Olives, as it was called. ³⁸And all the people would get up early in the morning to listen to him in the temple.” Is this the conclusion of Jesus’ teaching activity or the starting point of the passion narrative? Usually it is regarded as the final summary of Jesus’ days in the temple, before the passion narrative begins in 22:1.³² Yet the key phrase “Mount of Olives” is an argument supporting the latter solution, for in Luke the preceding eschatological discourse (21:7-36) is not located on the mount opposite the temple (as in Mark 13:3), but is a part of Jesus’ teachings in the temple district (21:5). When the Mount of Olives is introduced here as the place where Jesus stays overnight (in Mark 11:11 this is Bethany), then this note belongs together with Judas’ agreement with the chief priest and the scribes “to look for an opportunity to betray him to them when no crowd was present” (22:6). Thus the fourth main section containing Jesus’ teachings in the temple covers the passage 20:1–22:36. The two summaries at the beginning and end, apparently related to each other, are both excluded.

The fifth and last main section consists of the rest of the gospel in 22:37–24:53. In three little scenes at the beginning (21:37-38; 22:1-2, 3-6), before “the day of Unleavened Bread” (22:7), the dramatic tension is built up by Judas arranging his betrayal. There is no further main caesura constituting a sixth main section.³³ The passion and the resurrection narratives are closely linked by the women’s intention to anoint the crucified body: on Friday they prepare the “spices and ointments” (23:56a), on Sabbath they rest (23:56b), and on Sunday they go to the tomb (24:1). Against the chapter division, Sabbath and Sunday are

³⁰ Cf. Grasso, *Luka*, 40: 9:51–19:46; Wolter, *Lukasevangelium*, x; Meynet, *Luc*, 763: the summaries 19:47-48 and 21:37-38 framing the section 19:47–21:38.

³¹ See also Green, *Luke*, 399.

³² Differently Schweizer, *Lukas*, 197; Sabourin, *Luc*, 313; Bovon, *Lukas*, 1:15: Jerusalem period (19:28–24:53) as one main section divided into two or three subsections.

³³ Differently Grundmann, *Lukas*, IV; Wiefel, *Lukas*, IX: 24:1-53 as last main section.

especially connected by the particles μέν – δέ (23:56b / 24:1). The subdivision of this main section follows the chronological order: Passover with preparation (21:37-65), Friday (22:66–23:56a), and Sunday with the day before (23:56b–24:53).³⁴

Throughout the whole book the setting is often the temple in Jerusalem. It begins with Zaccharias' service in the sanctuary (1:9), and in the very last verse the disciples are "continually in the temple blessing God" (24:53). Jesus as babe and as child is pictured there (2:22-38, 41-50), and the last temptation takes place upon the pinnacle of the temple in Luke 4:9, in contrast to Matt 4:5. In the middle main section (9:51–19:48), as we have seen, the long journey leads finally to the temple where the next main section (20:1–21:36) is situated. A detail corroborates the distinction between the first and the last main sections (1:5–4:13; 21:37–24:53) and the three main sections of Jesus' public activity in between. As Conzelmann has pointed out, in the very last verse of the first main section (4:13) the devil departs from the scene after the temptation story "until an opportune time", and he comes back to enter into Judas Iscariot, right at the beginning of the passion narrative (22:3).³⁵ This fits very well to the structure we suggest.

3. Stichometry of the Five Main Sections

What are the sizes of these five main sections in terms of *stichoi*? It is relatively easy to break the whole Greek text into lines of 15 syllables and count the total of *stichoi*. It seems, however, that the authors when disposing their books used the rounded up *stichoi* numbers of the single paragraphs, as we have seen in the parables above. That means that the numbers and places of the line breaks influence the *stichoi* numbers of the larger units. Therefore the paragraphing based on an analysis of contents has to be done first in order to establish the *stichoi* numbers of the main sections. We will demonstrate this in greater detail for the first main section, the other sections will follow in a condensed way. The basis is the UBS edition concerning text and paragraphing; deviations will be noted. The results are summarized in *tables 5-9*.

3.1 Prologue and Beginnings of John the Baptist and Jesus: 1:1–4:13

The prologue with the dedication to Theophilus (1:1-4) consisting of one sentence is one paragraph in itself. Its size is 7:10 exactly, rounded up 8 *stichoi*. It

³⁴ Cf. UBS⁵: new paragraph at 23:56b; differently Klein, *Lukasevangelium*, 717: new subsection at 23:55; Sabourin, *Luc*, 374; Wolter, *Lukasevangelium*, 767: at 24:1.

³⁵ See H. Conzelmann, *Die Mitte der Zeit*. Studien zur Theologie des Lukas (BHT 17, 4th ed.; Tübingen 1960) 22.

seems that this is not a random number, for it belongs to the Fibonacci sequence as we have seen.

In 1:5–4:13 the beginnings of Jesus and the story of the Baptist are skillfully interwoven in seven parts. Commentators who regard 3:1–4:13 as a separate section or place the next main break differently are not able to see this artful structure. The breaks between the subsections are clearly defined by the change of the two main characters. There is a debate only about 2:21 where two subsections dealing with Jesus adjoin each other. The verse is sometimes connected with the preceding Bethlehem story.³⁶ Usually, however, it is seen as the beginning of the childhood stories following, a delimitation corroborated by the internal structure of the two subsections as we will demonstrate below. In this understanding, the wonderful story of Jesus' birth (2:1-20) is the central subsection, certainly by intention.³⁷ Before that, two subsections on John, the announcement of his birth to Zacharias and the birth itself, frame the subsection on the announcement of Jesus' birth to Mary (1:5-25, 26-56, 57-80). Thereafter two subsections on Jesus, his childhood and his baptism together with his ancestry and temptation, frame the subsection on John's appearance at the Jordan (2:21-52; 3:1-20; 3:21–4:13).

The subsections are often composed in a concentric way. The first one, the announcement of the Baptist's birth (1:5-25), is a good example: the scene in Jerusalem forms the middle paragraph (1:8-23), in the center Zechariah's vision in the temple (vv. 11-20) with the angel's message (vv. 13-17), surrounded by the people praying and waiting outside (vv. 8-10, 21-23)³⁸. It is introduced and concluded by separate paragraphs about Elisabeth's infertility and pregnancy (1:5-7, 24-25).³⁹ The lengths of the three paragraphs are $10 + 41 + 5 = 56$ (55:05) *stichoi*. The subsection on the announcement of Jesus' birth (1:26-56) consists of five paragraphs. A short introduction and conclusion (1:26-27, 56) on the angel's sending to Nazareth and Mary's return frame three weighty scenes: the appearance of the angel, Mary's visit with Elisabeth, and the Magnificat (1:28-38, 39-45, 46-55). Mary calls herself "servant of the Lord" at the end of the second and at the beginning of the fourth paragraph (vv. 38, 48) which indicates a concentric composition.⁴⁰ The paragraphs measure $5 + 24 + 16 + 16 + 2$

³⁶ See Bovon, *Lukas*, 1:115: 2:1-21 as unit; Wolter, *Lukasevangelium*, 119: distinction between Bethlehem and Jerusalem stories (2:4-21, 22-39).

³⁷ Differently Meynet, *Luc*, 46: not 7, but 8 subsections, arranged in four pairs dealing with two announcements, births, consecrations in the temple (2:21-40, 41-52), and preparations of Christ's coming.

³⁸ See Grasso, *Luka*, 57: scheme of "forma chiastica".

³⁹ Deviating from UBS⁵ new line breaks are placed at 1:8, 28; 2:51; breaks are moved from 1:21 to 1:24; from 3:15 to 3:19.

⁴⁰ See Meynet, *Luc*, 82.

= 63 (61:09) *stichoi*, two being the same size (15:12 and 15:13 *stichoi*). The next subsection (1:57-80) contains the Baptist's birth, the Benedictus, and a short note on John's growing up (1:57-66, 67-79, 80). The three paragraphs have a length of $23 + 23 + 3 = 49$ (47:08) *stichoi*, two of them again being equal (22:05 and 22:07).

The middle subsection, the story of Jesus' birth in Bethlehem (2:1-20), is an elaborate concentric composition in three paragraphs. The birth narrated in the first part (2:1-7) is explained to the shepherds in the middle part (2:8-14), with the angel's message in the center (vv. 10-12) surrounded by the "glory of the Lord" and the "multitude of the heavenly host" (vv. 9, 13). In the last part (2:15-20) the shepherds find the child in Bethlehem as narrated in the first part and revealed to them by the angel whose message is referred to five times in these verses. The sizes are $16 + 15 + 15 = 46$ (45:03) *stichoi*, the two equal paragraphs being 14:06 and 14:12.

The fifth subsection is the longest, with seven paragraphs. Three short parts on Jesus' circumcision and his growing up in Nazareth (2:21, 39-40, 51-52) frame two weighty scenes in Jerusalem: the first consists of three paragraphs (2:22-24, 25-35, 36-38) narrating Jesus' presentation in the temple and his encounter with Simeon and Anna, the other scene (2:41-50) deals with the boy of twelve years. The paragraphs measure $4 + 8 + 24 + 10 + 5 + 23 + 6 = 80$ (76:02) *stichoi*. The next subsection on John the Baptist's public appearance (3:1-20) has three paragraphs: John's proclamation as fulfillment of Isaiah's prophesy (3:1-6), his proclamation in detail (3:7-18) and his imprisonment by tetrarch Herod (3:19-20). The *stichoi* numbers are $19 + 34 + 5 = 58$ (56:10).⁴¹ In the last subsection (3:21-4:13), Jesus is identified as Son of God in each of the three paragraphs: at his baptism by the heavenly voice (2:21-22), at the end of the genealogy (3:23-38) aiming toward Ἀδὰμ τοῦ θεοῦ ("Adam, son of God"), and in the temptation story twice by the tempting devil (4:1-13). Their length is $7 + 20 + 29 = 56$ (54:13) *stichoi*.⁴²

⁴¹ The text of UBS⁵ is shortened by 5 syllables: in 3:1, 3x τετραρχοῦντος instead of τετρααρχοῦντος with all witnesses except \aleph^* C cop^{sa,bo}, see B.M. Metzger, *A textual commentary on the Greek New Testament* (corr. ed.; Stuttgart 1975) 400 ad Acts 13:1; ditto in 3:19 τετράρχης instead of τετροάρχης; in 3:20 the bracketed [καί] is deleted with \wp^{75} \aleph^* B D and NA²⁵. Then 3:1-6 is still 19 *stichoi* (exactly 18:05 instead of 18:08), but 3:19-20 is 5:00 instead of 5:02.

⁴² In 3:36-37 the spelling Καίνάμ (not Καϊνάμ) seems to be more correct, see F. Blass, A. Debrunner, F. Rehkopf, *Grammatik des neutestamentlichen Griechisch* (15th ed.; Göttingen 1979) § 37.3. With the short form used twice, 3:23-38 is 19:14 *stichoi* (instead of 20:01).

<i>Table 5: Subdivision of prologue and first main section</i>		<i>stichoi</i> : exact	rounded	§§
1:1-4	0. Prologue	7:10	8	1
1:5-25	1.1 John the Baptist: announcement	55:05	56	3
1:26-56	1.2 Jesus: announcement	61:05	63	5
1:57-80	1.3 John the Baptist: birth	47:08	49	3
2:1-20	1.4 Jesus: birth in Bethlehem	45:03	46	3
2:21-52	1.5 Jesus: as child in Jerusalem and Nazareth	76:02	80	7
3:1-20	1.6 John the Baptist: public appearance	56:10	58	3
3:21-4:13	1.7 Jesus: baptism, ancestors, temptation	54:13	56	3
1:5-4:13	1. <i>Beginnings: John the Baptist and Jesus</i>	397:05	408	27

The results of *stichoi* counting are listed in *table 5*: in the right column the exact numbers, next to them the numbers deduced by rounding up the sizes of each paragraph to full *stichoi*; the numbers of paragraphs are listed in the last column. On this basis we are able to analyze the proportions between the seven subsections:

- The second subsection, the announcement of Jesus (1:25-56), numbers $63 = 3 \times 21$ *stichoi*, the second of its five paragraphs (1:28-38), the dialogue of Gabriel and Mary, numbers $24 = 3 \times 8$, the others $39 = 3 \times 13$ *stichoi* together – 8, 13, and 21 being numbers of the Fibonacci sequence.
- The two surrounding subsections on John, his announcement and birth (1:5-25, 57-80), number $56 + 49 = 105 = 5 \times 21$ *stichoi* together. Thus the sum of these three subsections is $168 = 8 \times 21$ *stichoi* – 3, 5, and 8 also being numbers of the Fibonacci sequence.
- The fourth and sixth subsections, on Jesus' birth and John's baptizing (2:1-20; 3:1-20), add up to $46 + 58 = 104 = 13 \times 8$ *stichoi*.
- The sum of these two and the first three subsections is $104 + 168 = 272 = 34 \times 8$ *stichoi* – 34 also being a Fibonacci number.
- The two remaining subsections, on Jesus' growing up and his baptism (2:21-52; 3:21-4:13), number $80 + 56 = 136$ *stichoi* together or 4×34 or half the size of the other five subsections.
- The size of Luke's first main section summarized is $8 \times 34 + 4 \times 34 = 12 \times 34$ *stichoi*.

When we survey these results, there are so many proportions of Fibonacci ratios that they cannot be seen as accidental. The author has elaborated them intentionally. In contrast to the first five subsections (1:5-2:52) he was dependent from his sources Mark und Q beginning with 3:1. Nonetheless he has included also the following two subsections in his overall design in the way we have observed in the parables. Accordingly, the three hymns he has inserted into this main section have sizes which correspond to Fibonacci numbers: the Magnificat (1:46b-55) measuring $16 = 2 \times 8$ (15:06), the Benedictus (1:68-79) measuring 21

(20:10), and the Nunc Dimittis (2:29-32) measuring 5 (4:10) *stichoi*; in the Benedictus, the doxology (1:68-75) measures 13 (12:10) *stichoi*, the prophesy on John (1:76-79) exactly 8:00.⁴³

It is remarkable as well that the *stichoi* sums very often are multiples of 8. This holds for the total, the subsections and also for some paragraphs. The first and seventh subsections number $56 = 7 \times 8$, the fifth $80 = 10 \times 8$ *stichoi*, the second and third together $112 = 14 \times 8$, and the fourth and sixth together $104 = 13 \times 8$. The total of 408 *stichoi* = 12×34 can also be dissolved as 51×8 . It seems that the length of 8 *stichoi* is used as modulus, and that the size of the prologue defines this modulus right at the beginning. In the same way, the prologue gives the modulus in Mark 1:1-13, John 1:1-18, Acts 1:1-11 and Rom 1:1-15, in all four instances being 34 *stichoi*.⁴⁴

3.2 *Jesus in Galilee: 4:14–9:50*

The next two main sections are not as clear in their structure as the first one, especially in the parts not following the narrative thread of Mark. They have been compiled in the “small insertion” (6:20–8:3) in Galilee and in the “great insertion” on the journey (9:51–18:14), consisting of Q tradition and Lukan *Sondergut*. It seems that the author could not arrange these materials in the same artful way because dependent on his sources.

The second main section seems to be structured by two speeches: the sermon on the plain (6:20-49) and the parables (8:4-21). In both cases Jesus talks at the end about hearing the word of God and doing it (6:47-49; 8:21). The *Vorlage* in Mark 3:35 is about doing “the will of God”, whereas Luke 8:21 (“the word of God”) is obviously adjusted to the Q tradition of 6:47 (“my words”) as part of a concentric composition.⁴⁵ The first speech is framed by the call of the disciples and the multitudes coming from Judea and the coastal region (6:12-19) and by the gentile, but faithful centurion of Capernaum (7:1-10), the second one by the women accompanying Jesus (8:1-3) and by the calming of the storm and the faithless disciples (8:22-25). These two subsections (6:12–7:10; 8:1-25), for their part, frame a middle subsection (7:11-50) about the relation of Jesus and John the Baptist (7:18-35). The statement “the dead are raised” (v. 22) is prepared by the raising of the widow’s son at Nain (7:11-17), and the reproach “a friend of tax collectors and sinners” (v. 34) is confirmed by the story of the sinful woman anointing his feet (7:36-50).

⁴³ See: F.G. Lang, “Abraham geschworen – uns gegeben. Syntax und Sinn im Benediktus (Lukas 1.68–79),” *NTS* 56 (2010) 491-512, at 511.

⁴⁴ See Lang, “Maßarbeit” 1, 115 n. 24; *idem*, “Adam”, 208.

⁴⁵ Cf. Matt 12:50: “the will of my father in heaven”; 7:24, 26: “these words of mine”.

How to arrange the episodes before and after these three subsections into a meaningful outline? Many diverging attempts can be observed. In our understanding Luke is very much interested in a good, well-balanced shape of his gospel, therefore we propose a caesura at 5:17. Then the first subsection (4:14–5:16) deals with Jesus’ first appearances in Nazareth, Capernaum and at the lake of Gennesaret (4:16-30, 31-44; 5:1-11), framed by two short paragraphs, a summary and a healing story (4:14-15; 5:12-16). In the next subsection (5:17–6:11) the antagonists enter the scene, Pharisees and scribes, in five controversies taken over from Mark 2:1–3:6. The caesura is sometimes moved to 5:12 or 5:1, but Jesus’ withdrawal to a deserted place in 5:16 and the gathering of his opponents “from every village of Galilee and Judea and from Jerusalem” in 5:17 mark a more important break.⁴⁶

After 8:26 a further caesura is proposed at 9:10. In both verses Jesus and the disciples move around the lake: in 8:26 to “the country ... opposite Galilee”, in 9:10 to Bethsaida in the north. In the one subsection (8:26–9:9) Jesus’ fame is spread in east and west by three sensational wonders (8:26-39, 40-56) and by the mission of the Twelve so that even tetrarch Herod hears about him (9:1-9). In the seventh and last subsection (9:10-50), when the apostles come back, Jesus wants to be with them separately, which is the essential point of these episodes.⁴⁷ Yet first the crowds following him have to be fed (9:10-17). Thereafter he can talk about his identity, about his imminent passion and resurrection and about the fate of his followers (9:18-27) which is varied in the last paragraph (9:43b-50). In the central scene (9:28-36) his true identity is revealed secretly to three disciples upon the mount of transfiguration, followed by the boy with a demon the disciples could not cure (9:37-43a).

It seems that the first and last subsections are connected as they ask and answer questions about Jesus’ identity: “Is not this Joseph’s son?” (4:22), “the Holy one of God” (4:34), and “the Son of God” (4:41) on the one hand, “the Christ of God” (9:20), and “This is my Son, my Chosen” (9:35) on the other.⁴⁸ The second subsection closes with the question of the opponents, “what they might do to Jesus?” (6:11), the sixth with Herod’s perplexity: “John I beheaded; but who is this?” – also hinting at his passion.

The results of the *stichoi* counting are given in *table 6*. The Greek text was shortened by one syllable.⁴⁹ The paragraphing of UBS⁵ was altered sometimes

⁴⁶ See Cousin, *Luc*, 79; Sabourin, *Luc*, 147; break at 5:12: Marshall, *Luke*, 206; at 5:1: Green, *Luke*, 227; Eckey, *Lukasevangelium*, 1:238; Wolter, *Lukasevangelium*, 209.

⁴⁷ By putting the caesura at 9:1 the departure and return of the disciples is seen as main point, see Marshall, *Luke*, 349; Sabourin, *Luc*, 195; Klein, *Lukasevangelium*, 326.

⁴⁸ Cf. Meynet, *Luc*, 443.

⁴⁹ In 9:7 τετράρχης instead of τετραρχης again (s. above n. 41); 9:1-9 then 22:00 *stichoi*.

according to the internal structure of the subsections and in accordance with the overall proportions, the total then being 49 paragraphs instead of 46.⁵⁰ In six of seven subsections the rounded sums are multiples of 8. The third and fifth subsections add up to $17 \times 8 + 9 \times 8 = 26 \times 8 = 208$ *stichoi*, which is double the length of the fourth subsection being 104 *stichoi*. The first two subsections are $128 + 96 = 224$ *stichoi* together, almost the same size as the last two with $107 + 120 = 227$ *stichoi*. The odd totals of the sixth subsection (107) and the main section (763 *stichoi*) are due to the stichometric analysis of the whole book and will be explained below.

<i>Table 6: Subdivision of the second main section</i>		<i>stichoi</i> : exact	rounded	§§
4:14–5:16	2.1 Nazareth, Capernaum, lake: first appearances	124:05	128	9
5:17–6:11	2.2 Pharisees and scribes: controversies	92:07	96	5
6:12–7:10	2.3 Plain: call of twelve disciples and sermon	130:14	136	11
7:11–50	2.4 Disciples of John: Jesus’ identity required	101:10	104	5
8:1–25	2.5 Crowd and disciples: sermon in parables	70:10	72	7
8:26–9:9	2.6 Extended radius: attention in east and west	104:01	107	7
9:10–50	2.7 Bethsaida: feeding story, Jesus’ identity revealed	116:11	120	5
4:14–9:50	2. <i>Galilee: Jesus’ ministry and identity</i>	740:13	763	49

3.3 *Jesus on the way to Jerusalem: 9:51–19:48*

At first sight it seems difficult to structure the narrative of Jesus’ long journey to Jerusalem. If we have a closer look, we can observe two rather long units presenting Jesus as teacher. In 12:1–49 a huge crowd has “gathered by the thousands” and in 15:1–17:10 “all the tax collectors and sinners” are listening to him. The interlocutors are changing, but place and time remain the same. If we understand these scenes as two subsections, the passage in between (13:1–14:35) seems to be a third one, dealing with Pilate’s cruelty, Herod’s plans to kill Jesus, and the prophets killed in Jerusalem (13:1, 31, 34). The way to Jerusalem (13:22) is explained as the way to the cross (13:33; 14:27).

Prior to 12:1 a further caesura makes sense at 11:1 since the scene with Martha and Mary welcoming Jesus (10:38–42) seems to refer back to the Samaritan village rejecting him (9:51–56). The episodes of 9:51–10:42 form a first subsection composed concentrically and those of 11:1–54 a second one. Towards the end of the journey, Jerusalem is mentioned twice as the destination (17:11; 18:31). Both verses inaugurate new subsections: in 17:11–18:30 the way is still going through Samaria and Galilee, in 18:31–19:48 it is going up through Jericho to Jerusalem. Thus the third main section consists of seven subsections,

⁵⁰ Line breaks moved (3): from 6:37 to 6:36; from 8:32 to 8:30; from 8:42b to 8:43; inserted (8): before 4:22, 28; 6:32, 35, 39, 41; 7:24; 8:34; deleted (5): before 6:17; 9:7, 21, 46, 49.

too,⁵¹ the first and seventh dealing with the same route, first down to Jericho in the parable of the Samaritan (10:30), then up to Jerusalem in the Jesus narrative (19:28). A main topic of the second and sixth subsections is prayer (11:1-13; 18:1-14), again a strong indication of concentricity.

The *stichoi* totals of the seven subsections are listed in *table 7*. As already mentioned, the UBS⁵ text has been changed in 15:16; a version longer by 6 syllables is preferred, without relevance for the *stichoi* sums.⁵² In 19:22 the syllable σϵ (“you”) is deleted so that the paragraph 19:15-23 has exactly 22:00 *stichoi*.⁵³ In our delimitation this main section has 21 paragraphs more than the 65 in UBS⁵.⁵⁴ On this basis the totals of all seven subsections are multiples of 8 again. The first two subsections have the same size with 144 = 18x8 *stichoi* each, the last two as well with 136 = 17x8 each. The last two together are 34x8 *stichoi* or one fourth of the whole main section being 136x8 = 32x34 = 1088 *stichoi*. The first and the two last subsections add up to 52x8 = 32x13 *stichoi*, the other four to 84x8 = 32x21, the ratio 13/21 being a ratio of Fibonacci numbers.

<i>Table 7: Subdivision of the third main section</i>		<i>stichoi</i> : exact	rounded	§§
9:51–10:42	3.1 Departure: Jesus rejected and accepted	137:12	144	11
11:1-54	3.2 On the way: disciples, opponents, and crowds	140:01	144	13
12:1-59	3.3 Huge crowd: on discipleship and trust in God	145:08	152	15
13:1–14:35	3.4 Way to Jerusalem: suffering and death announced	181:11	184	9
15:1–17:10	3.5 Tax collectors and sinners: on forgiveness	186:14	192	13
17:11–18:30	3.6 Samaria/Galilee: on the kingdom of God	128:07	136	15
18:31–19:48	3.7 Arrival: from Jericho to the Jerusalem temple	131:04	136	10
9:51–19:48	3. <i>Way to Jerusalem: Growing dispute over Jesus</i>	1051:12	1088	86

3.4 *Jesus teaching in the temple: 20:1–21:36*

This short main section can be divided into three parts according to Jesus’ interaction with his audience. First he answers critical questions of “the chief priests and the scribes ... with the elders” (20:1-40), then he attacks them himself (20:41–21:6), and finally he teaches about date and signs of the eschatological events (21:7-36).

⁵¹ Cf. Meynet, *Luc*, 480: the same seven subsections (only break at 13:1 instead of 13:22), but 19:47–21:38 as eighth subsection.

⁵² See above n. 10.

⁵³ See NA²⁸ apparatus: κρινῶ (“I will judge”) “*sine acc.*” in Cod. Ɀ A B D L W.

⁵⁴ Line breaks are moved (1): from 14:16 to 14:15; deleted (11): before 9:57; 10:21; 12:57; 13:6, 18, 20; 14:34; 17:5, 7; 19:41, 45; introduced (32): before 10:5, 8, 10, 29, 37; 11:9, 17, 30, 53; 12:15, 16, 29, 32, 39, 43; 13:34; 15:3, 13, 20, 28b; 16:16; 17:22, 26, 28, 31, 33, 37; 18:6, 28; 19:12, 15, 24.

The one caesura is obvious, for the opponents “no longer dared to ask him” (20:40). The other one is usually cut before 21:5-6, when some are praising the beauty of the temple building and Jesus answers by announcing its destruction. Yet this can also be understood as a part of a tripartite counter-attack dealing with David’s son, the scribes’ arrogance and the temple’s doom (20:41-44; 20:45–21:4; 21:5-6). The particle οὖν in 21:7 (“now, when will this be?”) seems to indicate a new topic, yet derived from the preceding verse. The following speech is no controversy any more, but an admonition to the disciples, though in Luke it takes place in the public of the temple, not separately on the Mount of Olives as in Mark 13:3. The address διδάσκαλε (“teacher”) is used in Luke by others than the disciples, but the content of the speech certainly refers to Jesus’ followers.⁵⁵

The main section has 13 paragraphs in UBS⁵, 15 in our analysis; the text was shortened by 1 syllable.⁵⁶ On this basis the three subsections number 189 = 9x21 *stichoi* together (*table 8*). The three partial sums are also multiples of 9, the middle one being one seventh of the total, the ratio of the first two and the third one being 117 / 72 = 13x9 / 8x9.

<i>Table 8: Subdivision of the fourth main section</i>		<i>stichoi</i> : exact	rounded	§§
20:1-40	4.1 Jesus attacked: diverse controversies	88:02	90	5
20:41–21:6	4.2 Jesus attacking: criticism of opponents	25:01	27	3
21:7-36	4.3 Jesus teaching: eschatological discourse	68:11	72	7
20:1–21:36	4. <i>Jerusalem temple: Jesus as teacher</i>	181:14	189	15

3.5 *Jesus’ death and resurrection: 21:37–24:53*

The last main section is clearly structured in terms of time as we have seen.⁵⁷ The narrative is basically condensed to three days, Thursday, Friday and Sunday, the day beginning in the morning (22:66; 24:1). The number of paragraphs is 27 in UBS⁵, 29 in our structuring (see *table 9*).⁵⁸ The verses printed in UBS⁵ in double brackets (22:43-44; 23:34a) have been deleted since they are “no part of the original text”;⁵⁹ they are 4:03 and 1:08 *stichoi* in length.

The *stichoi* subtotals of the three subsections are multiples of 8 again: 144 = 18x8, 136 = 17x8, and 120 = 15x8, the total being 400 = 50x8 *stichoi*. The ratio

⁵⁵ Cf. Klein, *Lukasevangelium*, 646 n. 21: used here by the disciples as an exception.

⁵⁶ Line breaks are introduced at 20:16b; 21:10, 12; deleted at 21:1. The bracketed τις in 20:9 has been deleted with \aleph B \aleph and NA²⁵; thus 20:9-16a exactly 20:00 *stichoi*.

⁵⁷ See above n. 34.

⁵⁸ Line breaks have been inserted (4): 22:19; 24:17, 33, 45; deleted (2): 22:1, 63; moved: from 23:32 to 23:33.

⁵⁹ See Metzger, *Commentary*, 177, cf. 180 (“probably”).

of the first subsection to the two others and to the total is $18 \times 8 / 32 \times 8 / 50 \times 8 = 2 \times 9 / 2 \times 16 / 2 \times 25 = 3 \times 3 / 4 \times 4 / 5 \times 5$. That means that the ratios between these three sections equal the ratios between the square numbers of a Pythagorean triangle; the numbers 3, 4, and 5 form the well-known example of the Pythagorean triple. Perhaps the author has even thought of such rather sophisticated relations.

There are also remarkable proportions within the subsections. The Thursday subsection consists of three scenes in the city (21:37–22:6; 22:7–23, 24–38) and two on the Mount of Olives (22:39–53, 54–65). The ratio of the *stichoi* numbers is $90 / 54 = 18 \times 5 / 18 \times 3$. The Friday subsection can be divided into two parts, the trial in two scenes (22:66–71; 23:1–25) and the execution in three (23:26–32, 33–49, 50–56a), both of the same length: $13 + 55 = 16 + 37 + 15 = 68 = 2 \times 34$ *stichoi*. If the middle scene, the way to crucifixion, is combined with the trial scenes the ratio is $84 / 52 = 4 \times 21 / 4 \times 13$, again a ratio of Fibonacci numbers. Finally, in the Easter subsection the two appearances of the Risen (24:13–32, 36–49) are double the size of the three framing scenes (23:56b–24:12; 24:33–35, 50–53): $51 + 29 = 80$ and $26 + 6 + 8 = 40$ *stichoi*. It seems that the author had a sense for these proportions.

<i>Table 9: Subdivision of the fifth main section</i>			<i>stichoi</i> : exact	rounded	§§
21:37–22:65	5.1	Thursday night: Passover meal and arrest	138:03	144	11
22:66–23:56a	5.2	Good Friday: trial and crucifixion	132:01	136	9
23:26b–24:53	5.3	Easter Sunday: empty tomb and appearances	115:03	120	9
21:37–24:53	5.	<i>Passover in Jerusalem: Jesus crucified and risen</i>	385:07	400	29

4. Stichometry of the Gospel of Luke

In *table 10* the results of the detailed analysis are summarized, first the rounded *stichoi* numbers established for prologue and main sections, then the calculated proportions based on a modulus of 8 and finally of 34 *stichoi*. The total of Luke's first book is $2856 = 357 \times 8 = 84 \times 34$ *stichoi*.

The modulus of 8 *stichoi* seems to be predefined by the prologue in 1:1–4. Only two of the five main section totals cannot be derived from this number. Among the 28 subsections only 7 have subtotals not being multiples of 8. Four of them belong to the first main section, the composition of which is different from the rest albeit highly elaborate in its own way. Three others belong to the second and fourth main sections having uneven totals.

<i>Table 10: Proportions of the main sections</i>			counted	/	calculated	<i>stichoi</i>
1:1-4	0.	Prologue	8	=	1x8	= + 8
1:5-4:13	1.	Beginnings of John and Jesus	408	=	51x8	= 12x34
4:14-9:50	2.	Jesus in Galilee	763	=	95x8 + 3	= 22x34 + 15
9:51-19:48	3.	Journey to Jerusalem	1088	=	136x8	= 32x34
20:1-21:36	4.	Jesus in the Temple	189	=	23x8 + 5	= 6x34 - 15
21:37-24:53	5.	Passover in Jerusalem	400	=	50x8	= 12x34 - 8
<i>1:1-24:53</i>	<i>0.-5.</i>	<i>Gospel of Luke</i>	<i>2856</i>	<i>=</i>	<i>357x8</i>	<i>= 84x34</i>

The modulus 34 is apparently used for the overall composition. Remarkable proportions can be observed by comparing the *stichoi* totals:

- The first main section and the last main section together with the prologue are of the same size: $400 + 8 = 408$ *stichoi*.
- This number is a multiple of 34, as shown in the total of the first main section: $408 = 12 \times 34$.
- It is also one seventh of the whole book: $2856 / 7 = 408$ *stichoi*, or $84 \times 34 / 7 = 12 \times 34$.
- The first and the last main sections plus prologue add up to $2 \times 408 = 816 = 24 \times 34$ *stichoi*.
- The middle main section measures $1088 = 32 \times 34$ *stichoi*; the ratio of prologue plus first plus last main section and the middle main section is $24 / 32 = 3 / 4$.
- The second and the fourth main sections together cover one third of the book: $763 + 189 = 952 = 28 \times 34 = 84 \times 34 / 3$ *stichoi*.
- All other parts of the book but the middle main section add up to $24 \times 34 + 28 \times 34 = 52 \times 34$ *stichoi*; the ratio between the middle main section and the rest of the book is $32 / 52 = 8 / 13$, a ratio of Fibonacci numbers, very close to the golden ratio.

The following hypothesis may explain the uneven lengths of the second and fourth main sections:

- The author defined the sum of both as one third of the book, i.e. 28×34 *stichoi*.
- According to the materials he wanted to include in the Galilee and Jerusalem main sections the ratio of the two main sections was defined as $4 / 1$, i.e. $952 / 5 = 190.4$ and $4 \times 190.4 = 761.6$ *stichoi*.
- Subsequently the size of the fourth main section was adjusted to $189 = 9 \times 21$ *stichoi* as basis of further structuring.
- Thus the size of the second main section resulted in $952 - 189 = 763$ *stichoi*.

Since we have calculated so far with rounded up numbers, we should be sure that the same relations are true when using the exact numbers:

- The difference between first main section and the last main section plus prologue is $397:05 - 393:02 = 4:03$ *stichoi*, the two numbers differ from the seventh of the total only by about 2 *stichoi*: $2765:07 / 7 = 395:01$.
- The sum of the second and fourth main sections is $740:13 + 181:14 = 922:12$, the third part of Luke is $2765:07 / 3 = 921:12$, the difference being just 1 *stichos*.
- The ratio of the middle main section and the rest of the book is $1052:03 / 1713:04$; the exact ratio $8/13$ of the total of $2765:07$ *stichoi* would result in $1053:08 / 1711:14$ *stichoi*, the difference being just $\pm 1:05$ *stichos*.

The sizes of sections and subsections have been calculated as well by Robert Meynet, not on the basis of *stichoi*, but by counting the characters.⁶⁰ He, too, observes that first and last main sections (without prologue) are “pratiquement de même longueur” (practically of the same length), containing 16513 and 16181 characters.⁶¹ By including the prologue, the result corroborates our *stichoi* counting exactly: if 408 *stichoi* correspond to 16513 characters, then 8 *stichoi* to 323.8, the sum of prologue and last main section then being 16505 characters. Meynet’s second example refers to the ratio of second and (his) third main sections, of 4:14–9:50 and 9:51–21:38; it is “très proche de la proportion d’or” (very close to the golden ratio), i.e. $30958 / 51479$ characters = 0.601..., and (the longer part to the sum of both) $51479 / 82437 = 0.624...$.⁶² In our reconstruction, this relation is not relevant, but the exact *stichoi* numbers lead to the same ratio: $740:13 / 1229:08$ *stichoi* (including 21:37-38) = 0.602..., and $1229:08 / 1970:06 = 0.624...$. Yet by analyzing the whole book, other proportions, even those of the golden ratio, turn out to be more important. Moreover, by recourse to *stichos* and Fibonacci numbers, it is possible to demonstrate how an ancient author was able to realize such sophisticated proportions.

Stichoi totals have been transmitted in quite a few manuscripts and in old lists of the canon. They were compiled by Theodor Zahn in 1890, some others have been published since. The subscription of Luke is 2800 *stichoi* in most manuscripts, but Zahn also notes 2607, 2677 2740, 2750, 2760, 3800, 3827.⁶³ The canon lists contain some more variants: 2600, 2700, 2850, 2900, 3083, 3300.⁶⁴

⁶⁰ See definition above n. 2.

⁶¹ See Meynet, *Luc*, 985.

⁶² Cf. Meynet, *Luc*, 985; the numbers correspond to the ratios $3/5 = 0.6$, and $5/8 = 0.625$.

⁶³ See T. Zahn, *Geschichte des Neutestamentlichen Kanons* II/1 (Erlangen 1890) 384-408, at 394-395 with n. 3.

⁶⁴ About the six numbers see Zahn, *Geschichte*, 394: Nicephorus; D. Serruys, “Anastasiana III. La Stichométrie de l’Ancien et du Nouveau Testament”, *MEFR* 22 (1902) 194-207, at 201: Anastasius Sinaïta; C.H. Turner, “An Unpublished Stichometrical List from the Freisingen MS of Canons”, *JTS* 2 (1901) 236-253, at 242; Zahn, 394: *Catalogus Claromontanus*; C. Marksches, “Haupteinleitung”, in: *idem*, J. Schröter (ed.), *Antike christ-*

The numbers above 3000 must be dismissed; they seem to be corrupt, as happened quite often in the transmission of Greek or Roman numerals. The total 2850 matches the result of our reconstruction (i.e. 2856), 2800 and 2900 could be rounded variants. The exact counting has resulted in 2765:07 *stichoi*, very close to the transmitted totals 2750 and 2760. If we take into consideration that four of the fifteen *nomina sacra* were constantly abbreviated in the manuscripts, then at least 34:08 *stichoi* have to be subtracted, and the rest comes close to 2740, rounded down to 2700.⁶⁵ What about the lower numbers? For Latin texts and also for Greek prose in late antiquity, a *stichos* of 16 syllables was used, as is evidenced in a publisher's note of the so-called *Canon Mommsenianus*.⁶⁶ The two standard lines were used at the same time.⁶⁷ By converting the exact 2765:07 *stichoi* of 15 syllables we arrive at 2593:12 *stichoi* of 16 which may explain the transmitted totals of 2600 and 2607. The difference may be based on different text versions.⁶⁸ Thus we can explain almost all variants in the one or other way. The transmitted stichometry confirms our counting.

5. Prospects of Stichometric Analysis

It was Seneca who once admonished his friend Lucilius, to “leave off all this word-play of [those] philosophers, who reduce a most glorious subject to a matter of syllables”.⁶⁹ If he thought of counting *stichoi* in this context, he seems to imply that a wise man had to go through this *ludus litterarius* before leaving it. In any case, the way Luke has disposed his gospel according to our analysis looks somehow strange in traditional exegetical perspective. An evangelist counting syllables and lines needs getting used to. Yet the stichometric approach yields similar results when applied to other writings of the NT. Luke's second book, Acts, for instance, measuring 2788 = 82x34 *stichoi* is slightly smaller than his gospel, the longest book of the NT, and there are further examples.

Sections of the same size as between the first and last main sections in Luke can be discovered quite often:

liche Apokryphen in deutscher Übersetzung I/1 (Tübingen 2012) 1-180, at 131-133: Syriac Catalogue from Sinai; Zahn, 395: *Canon Mommsenianus*.

⁶⁵ Of the 4 nouns ΘΕΟΣ is found in Luke 122x, ΧΡΙΣΤΟΣ 12x, ΙΗΣΟΥΣ 89x, ΚΥΡΙΟΣ 103x; see R. Morgenthaler, *Statistik des neutestamentlichen Wortschatzes* (3rd ed.; Zürich 1982) 105. 107. 115. 156. The abbreviations are counted as 1 syllable, even for trisyllabic *nomina*. The other 11 nouns are rarer and not abbreviated constantly.

⁶⁶ See Lang, “Schreiben”, 42 n. 15.

⁶⁷ See Lang, “Adam”, 198: In Cod. B the marginal numbers found in 1-4 Kings and Isaiah seem to refer to the *stichos* of 16, the written lines to the *stichos* of 15 syllables.

⁶⁸ See above n. 59.

⁶⁹ See Seneca, *Lucil.* 71.6: *relinque istum ludum litterarium philosophorum qui rem magnificentissimam ad syllabas vocant* (trans. LCL).

- In Mark the Galilean main sections (1:14–8:21) and the Judean main sections (10:1–16:8) have $21 \times 34 = 714$ *stichoi* each, i.e. a product of two subsequent Fibonacci numbers.⁷⁰
- In Romans the general and special admonitions (12:1–13:14; 14:1–15:13) are of the same size with $4 \times 21 = 84$ *stichoi* each, together $8 \times 21 = 168$, again a product of Fibonacci numbers.⁷¹
- In 2 Corinthians Paul's two apologias (2:14–7:4; 10:1–13:10) measure 10×21 *stichoi* each, double the size of the collection section (8:1–9:15) measuring $5 \times 21 = 105$.⁷²
- In Ephesians the ecclesiological and the ethical sections (1:1–3:21; 4:17–6:24) measure $20 \times 8 = 160$ *stichoi* each, both aspects overlapping in the center (4:1-16).⁷³
- The two small letters of John are precisely of the same length, 2 John measuring $32:11$ *stichoi*, 3 John $32:09$, but by paragraphing 2 John is rounded up to 34, 3 John to 35 *stichoi*.⁷⁴

The ratio 1 / 3, found in Luke between the sum of second and fourth main sections and the total of the book, is also favored in other writings:

- In Matthew the middle main section embracing three of the five great sermons according our structuring (9:35–18:35) measures $26 \times 34 = 884$ *stichoi*, one third of the book being $78 \times 34 = 2652$ *stichoi*.⁷⁵
- In John the middle main section together with the prologue (1:1-18 + 7:1–12:50) sums up to $1 \times 34 + 20 \times 34 = 21 \times 34 = 714$ *stichoi* (without 7:53–8:11, of course), the total of the gospel being $63 \times 34 = 2142$ *stichoi*.⁷⁶
- In Acts the last main section, Paul's journey to Jerusalem and Rome (19:23–28:31), measures $27 \times 34 = 918$ *stichoi*, the total without prologue (1:12–28:31) being $81 \times 34 = 2754$ *stichoi*.⁷⁷
- In Hebrews the first main part (1:1–2:18) is $4 \times 21 = 84$ *stichoi*, that is half the size of the second main part (3:1–6:20) being $8 \times 21 = 168$ *stichoi*; the two

⁷⁰ See Lang, "Maßarbeit" 1, 115-117, exact numbers: 692:14 and 697:13 *stichoi*.

⁷¹ See Lang, "Adam", 205; exact numbers: 82:06 *stichoi* each.

⁷² See Lang, "Proportions 2 Corinthians", *CBQ*; exact numbers: 203:05, 205:06, 101:08.

⁷³ See Lang, "Ebenmaß", 151-152; exact numbers: 155:02, 156:02.

⁷⁴ See Lang, "Disposition", 68-70; in UBS⁵ (2014), 3 John 4 is shortened by τῆ, the first paragraph (v. 1-4) then being 8:02 *stichoi*, and the whole letter 32:09; the published article follows UBS⁴ (exact numbers 8:03, 32:10).

⁷⁵ See F.G. Lang, "Remarkable Proportions in the Structure of Matthew"; see also <www.stichometrie.de/pdf/Mt-Tabellen.pdf>; exact numbers: 863:03, 2605:08.

⁷⁶ As yet unpublished, see <www.stichometrie.de/pdf/Joh-Tabellen.pdf>; exact numbers: 671:09 + 33:04 = 704:13; 2083:06.

⁷⁷ As yet unpublished, see <www.stichometrie.de/pdf/Act-Tabellen.pdf>; exact numbers: 902:03, 2709:08.

parts together are $12 \times 21 = 252$ *stichoi*, the whole writing being $36 \times 21 = 756$ *stichoi*, without of the epistolary appendix 13:22-25 (= 8 *stichoi*).⁷⁸

Finally, ratios based on numbers of the Fibonacci series and approximating the golden ratio, as between Luke's middle main section and the rest of the book, are also applied in other parts of the New Testament:

- In Matthew the Sermon on the Mount and Jesus' following journey (5:1–7:29; 8:1–9:34) have sizes of $272 = 8 \times 34$ and $170 = 5 \times 34$ *stichoi*, the ratio $5/8$ being 0.625.⁷⁹
- In John the first two main sections and the third one plus prologue (1:19–12:58; 13:1–21:25 + 1:1-18) measure $1326 = 39 \times 34$ and $816 = 24 \times 34$ *stichoi*, the ratio $8/13$ being 0.615...⁸⁰
- In Acts the first main section without prologue (1:12–11:18) and the other two (11:19–28:31) measuring $1054 = 31 \times 34$ and $1700 = 50 \times 34$ *stichoi*, have a ratio of $31/50 = 0.62$; though not a ratio of Fibonacci numbers, this is a popular approximation to the golden ratio.⁸¹
- In Romans Paul develops his understanding of the gospel in three sections (1:16–4:25; 5:1–8:39; 9:1–11:36) being together $714 = 21 \times 34$ *stichoi*; the ratio of the middle section and the two others is $272 / 442 = 8 \times 34 / 13 \times 34$, with the first section one third of all three, being $238 = 7 \times 34$ *stichoi*.⁸²
- In 1 Peter the first section on God's election together with prescript and conclusion (1:1–2:10; 5:10-14) and the sum of the two following sections on Christian behavior and submission in sufferings (2:11–4:11; 4:12–5:9) have a ratio of $105 / 168$ *stichoi* = $5 \times 21 / 8 \times 21$.⁸³
- In 2 John the ratio of prescript and conclusion (1-3; 12-13) is $8/5$ *stichoi*, that of their sum and the corpus (4-11) is $13/21$, and in the corpus of 3 John (2-12) the ratio of the first paragraph and the two following (5-8; 9-12) is $8/13$, the middle paragraph being 7 *stichoi* or one third of the corpus.⁸⁴

There are no indications that this kind of literary technique belongs exclusively to the New Testament. In ancient Greek and Latin literature similar proportions have also been registered, for example in Plato and Isocrates or in late

⁷⁸ See Lang, "Observations", 189-190; exact numbers: 83:13, 167:06, 251:04, 753:06, 7:09.

⁷⁹ See Lang, "Proportions Matthew"; cf. above n. 75; exact numbers: 270:13, 168:03.

⁸⁰ See above n. 76; exact numbers: 1297:12, 785:09.

⁸¹ See above n. 77; exact numbers: 1038:00, 1671:08; cf. Lang, "Schreiben", 40-41: In UBS³ (1975) the ratio is $900 / 1457$ printed lines = 0.617... .

⁸² See Lang, "Adam", 208; exact numbers: 229:12 + 268:07 + 197:12 = 696:01.

⁸³ As yet unpublished, see <www.stichometrie.de/pdf/1Pt-Tabellen.pdf>; exact numbers: 100:05, 162:00.

⁸⁴ See Lang, "Disposition", 70; exact numbers of 2 John: 7:11, 4:11, 20:04; of 3 John 5-12: 7:06, 6:12, 5:14.

antiquity in Lucian, but on the basis of lines in modern text editions.⁸⁵ The stichometric approach if applied to non-Biblical texts will probably yield many comparable results. In the famous Funeral Oration of Pericles (Thucydides 2.35-46), for instance, when analyzed stichometrically, the first and third of the three main parts have the same size of 87/88 *stichoi* each and together $175 = 5 \times 35$, the middle main part plus prologue and epilogue is $24 + 60 + 21 = 105 = 3 \times 35$, the whole speech being $280 = 8 \times 35$ *stichoi*.⁸⁶ It seems that the NT authors followed the usual practice and the common esthetic principle first described by Plato:⁸⁷

Every speech must be put together like a living creature, with a body of its own;
it must be neither without head nor without legs;
and it must have a middle and extremities
that are fitting both to one another and to the whole in the written work.

Summary

The size of ancient Greek prose was measured by a standard line of 15 syllables. This so-called *stichos* was applied also by authors. The article seeks to demonstrate this thesis in the composition of Luke by analyzing some parables and the whole book. Starting point is a thorough structuring. The paragraphs and sections established thereby often have *stichoi* numbers of the Fibonacci sequence (e.g. 8, 13, 21, 34) or of their multiples. The total of Luke is $84 \times 34 = 2856$ *stichoi*. Jesus' activity in Galilee and Jerusalem (4:14–9:50; 20:1–21:36) covers one third of the book (28×34). The ratio of the long journey (9:51–19:48) to the rest is $8/13$ ($32 \times 34 / 52 \times 34$). Similar proportion have been found in other NT writings.

⁸⁵ For examples see Lang, "Schreiben", 55-56; *idem*, "Adam", 200-202.

⁸⁶ Exact numbers of the five parts: $23:10 + 84:07 + 58:03 + 86:10 + 20:09 = 273:09$ *stichoi*; see <www.stichometrie.de/pdf/Thukydides-Analyse.pdf>; the structuring follows P. Mommsen, "Der Kontrapost im Sprachkunstwerk", *Gymnasium* 89 (1982) 236-254, at 243.

⁸⁷ See Plato, *Phaedr.* 264C (trans. after A. Nehamas and P. Woodruff); cf. Lang, "Adam", 214: the phrase "have a middle and extremities" seems to allude to the Greek terminology of the golden ratio.