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Did the writers of the Bible use numbers as a way of structuring their texts?

A general introduction to logotechnical analysis

Article originally located at www.bibal.net.

Use and misuse of number in bible research

Throughout the history of literature, writers have used number as a device for producing and organizing text.

As compositional tools and constraints, their numeric schemes have varied from quite simple to extremely complex. But numeric structures are common enough in world literature that it's no surprise to find them in the Bible as well.

Some schemes, like numeric proverbs, have been recognized and have received serious study for centuries; others have been almost unrecognized for as long as anyone knows. But if we know what to look for, the structure of a Biblical passage— like that of a sonnet or of a haiku— has been there all along, and we can describe it.

From a different angle, most people today are familiar with writings like those of M. Drosnin on *The Bible Code* (New York: Simon & Schuster, 1997), or perhaps even with earlier works like that of Ivan Panin and K. G. Sabiers, breathlessly entitled, *Astonishing New Discoveries: Thousands of Amazing Facts Discovered beneath the Very Surface of the Bible Text*.

Distinguishing these efforts from serious study of the Biblical authors' compositional techniques, however, Professor Casper J. Labuschagne— who until his retirement in 1991, occupied a chair in Old Testament at the State University in Groningen, Netherlands, and who has devoted decades to studying numerical compositional techniques in the Bible— has dismissed the "Bible Codes" and other such fads as "the misuse of numbers by numerologists",¹ and he has had occasion to lament the fact that

¹ C. J. Labuschagne, *Numerical Secrets of the Bible: Rediscovering the Bible Codes* (North Richland Hills, TX: BIBAL Press, 2000), 153-157.

such enthusiastic excesses have done much to discredit more serious academic research into the use of number as a compositional technique in Scripture.

The misuse of number for numerology does not invalidate its usefulness for science, however, and in fact a fruitful foundation already exists for the study of numerical techniques used in the composition of Biblical texts.

Number as a structuring principle in the composition of texts

The Masoretes and others responsible for the copying and transmission of the Old Testament appear to have counted verses, words, and even letters of the biblical books. They also provided statistical information regarding important or difficult words and phrases. The figures they give often seem to be inaccurate, deficient, and incomplete, but perhaps we just don't know everything we need to know, to understand them. Moreover, they painstakingly marked the center of each book and group of books. This curious phenomenon has no explanation. But all of this activity shows that the very transmission of the Hebrew Bible included a concern for numbers on some level.

The first attempt in modern times to draw attention to the numerical aspects of the Hebrew Bible was made by Oskar Goldberg in 1908. After careful study, he concluded,²

“The Pentateuch is from the beginning to the end a numerical system, whose basic numbers derive from the divine Name YHWH. This numerical system presents itself primarily in the contents of the text and subsequently in its style up to its most refined finesses, in fact in the entire architecture of the text divided into paragraphs, verses and parts of verses. It governs the words, determines the number of letters and becomes manifest in their numerical value as well, while the combination of these factors exhibits the fixed principle of one single number. Therefore the Pentateuch should be regarded as the unfolding of this basic number, as the Name YHWH being unfolded in a writing-in-numbers.”

Goldberg argued his case in terms of specific texts. For instance, he points out that in the eleven verses of the genealogy of Shem in Gen 10:21–32, there are 104 (= 4 x 26) words— i.e., four times the gematric value of the divine Name (Y=10, H=5, W=6, H=5). Moreover, this passage has 26 x 15 =390 letters, and there are a total of 26 descendants of Shem. Computing the numerical value of all their names, we find that the

² The citation and translation here of Goldberg are taken from C. J. Labuschagne, *Numerical Secrets* (BIBAL Press, 2000), 111.

first 13 total $26 \times 138 = 3,588$, while the names of the 13 sons of Joktan add up to $26 \times 106 = 2,756$.

Or again, in the account of the war against Amalek in Exod 17:8–16, Goldberg counted a total of $7 \times 17 = 119$ words. And the number of letters in this passage is 449, not a multiple of 17, but a number the sum of whose digits ($4 + 4 + 9$) adds up to 17.

Goldberg presented numerous examples that demonstrate frequent use of the numbers 7, 17 and 26 throughout the Torah. Actual word and letter counts provided hard evidence for his thesis that the Torah as a whole is a numerical composition governed primarily by these numbers.

Despite its significance for understanding the nature of the Biblical text, Goldberg's work lay virtually ignored for more than half a century, largely because of fears that this area of research was nothing but "numerology", and because its methodology was not explicit enough for systematic application.

In the 1960's, however, Claus Schedl extended Goldberg's research by initiating what he called logotechnical analysis (*logotechnique*), and by providing a sound methodological basis for Goldberg's insights.³ By so doing, he placed numerical analysis alongside other forms of literary and philological criticism for investigating the formation of the Biblical text.

Schedl's work was grounded in two principles that are deeply embedded in Jewish tradition:

1. that the letters of the Hebrew alphabet have numeric values and hence could lend cumulative numeric values to any word written in them (gematria); and
2. that counting and writing were always understood to be closely related— indeed, the Hebrew word *sepher* can mean either a 'count' or a 'book' (which, in fact, as we might say, is an 'account' which the author 'recounts').

Schedl's colleagues rejected his approach— again because of disdain for "numerology"— and he was hampered by the lack of consulting partners other than his own students at the University of Graz in Austria. Nevertheless, his discoveries were significant, and the numerical structural analysis of Biblical texts remains a task for others to complete in the years ahead.

Regarding "numerology", gematria would seem to be inevitable in any literary culture that used its alphabet as a numeral system— and clearly, the Hebrews did this. And this in turn would naturally invite the readerly strategy of finding hidden connections in the

³ C. Schedl, *Bauplaene des Wortes. Einfuhrung in die biblische Logotechnik* (Wien 1974).

text based on gematric values. While this might provide an entertaining and sometimes even serious theological parlor game, no scholar, of course, would adopt gematria as a philological tool. But the game can be played from the other end, as well. Any author aware that his words have gematric values, can use those values as a structuring or constraining element as he develops his composition. This is hardly different from the use of an acrostic or the like, and apparently this is exactly what the Bible writers did.

A new critical method

To be sure, logotechnical analysis is still unfamiliar, and we need to emphasize again that it has nothing to do with numerological or kabbalistic speculation. It is purely an attempt to understand certain quantifiable features of the Biblical text. Briefly stated, the study of word counts, chiasmic structures, and the like, leads to the conclusion that the Biblical authors used certain numbers as structuring principles in the composition of their texts.

As might be expected, however, Schedl did find that early Jewish mystical works could sometimes provide valuable hints, even if they have not proven to be aware of the whole picture. Examining Kabbalistic literature (and bear in mind that “Kabbalah” means “tradition”), he learned that this “tradition” spoke of “32 secret paths of wisdom”, consisting of “10 *Sefirot*” and the different ways that the 22 letters of the Hebrew alphabet could be handled in traditional Jewish lore. The 32 Paths did indeed provide a first significant formula corresponding to a common logotechnical structure in Biblical texts: $22 + 10 = 32$.

Other formulas followed, including some based on a figure well known to students of the Pythagoreanism, the Tetraktys. The “Tetraktys” (a Pythagorean term), was simply the first four numbers ($1 + 2 + 3 + 4$) arranged as a series of pebbles in a triangular pattern, thus—

The total number of pebbles— the value of the Tetraktys— is 10, and 10 is thus shown to be a 'triangular' number. (Today we would say that it is the "summation of the numbers 1 through 4".) Now, the triangular number of 10 itself (i.e., the summation of all the numbers 1 through 10) is 55.

Schedl discovered numerous texts in the Bible which have 55 words arranged in two components, one containing 32 words (cf. the 32 Paths) and the other, 23. Both of these numbers had further significance in the Pythagorean system.

Triangular numbers also played a role in Babylonian mathematical systems. And such values often provided a basis for kabbalistic speculations regarding the Divine Name.

To be sure, the origins of the Kabbalah itself are not well understood, and in any case, as we know it today, it appears to have developed much later than the Bible. Yet we know that gematria was already in use at the time of Sargon II of Babylon.⁴ Thus without venturing any speculation here as to the origin of the practice, it is not surprising, especially in view of the fact that so much of the Bible is concerned with the Babylonian Exile, to discover that key numbers, such as triangular numbers, the tetraktys, and certain gematric figures, apparently played a role in the construction of Biblical texts.

To be sure, the Kabbalah itself seems only dimly aware of numerical structures used to compose the scriptures. Yet it does appear to preserve native Hebrew traditions about number in scripture, and some of the numbers it contemplates have proven to be logotechnically— i.e., compositionally— significant.

Logotechnical analysis differs from kabbalistic speculation

Although it makes use of gematric numbers, logotechnical analysis differs from kabbalistic speculation *per se*. Apparently, the Bible's writers used numbers as compositional tools or constraints, and numbers appear to function for Hebrew literature in ways that are similar, for example, to those of the Japanese haiku or other types of poetry. Logotechnical analysis is strictly concerned with this kind of *authorial* and *compositional* strategy.

Kabbalah, by contrast, is concerned with the (often quite ingenious) *readerly* discovery of “hidden meanings” in the text. Not to put too negative a spin on it, we can say that the presence of those meanings is a matter at least as much of creative reading as of any authorial intention. But we are interested here only in demonstrable *authorial* intention.

As mentioned, Goldberg demonstrated frequent use of the numbers 7, 17 and 26 throughout the Torah.

Again and again the careful tabulation of word counts, chiastic structures, and the like, show that Biblical writings were composed according to techniques in which the counting of words played a meaningful role. And since single patterns often unite texts which scholars usually assign to multiple sources, it can readily be seen that logotechnical discoveries may have far-reaching consequences for our views on the formation and structure of the Bible. However, much work needs to be done to understand such phenomena.

⁴ See G. Scholem, *The Origins of the Kabbalah* (original German edition, Berlin, 1962), pp. 414-415.

Professor Labuschagne has undertaken an extensive analysis of the entire book of Psalms, and is posting the results of his investigations at www.bibal.net, where you can download the data files and to study them for yourself.

Number evidently functioned as a creative and illuminating compositional tool in the hands of the Biblical writers.